



PressAcademia

JMML

Journal of Management,
Marketing & Logistics

PressAcademia publishes journals, books,
case studies, conference proceedings and
organizes international conferences.

jmml@pressacademia.org

ISSN 2148-6670





ABOUT THE JOURNAL

Journal of Management, Marketing and Logistics (JMML) is a scientific, academic, peer-reviewed, quarterly and open-access online journal. The journal publishes four issues a year. The issuing months are March, June, September and December. The publication languages of the Journal are English and Turkish. JMML aims to provide a research source for all practitioners, policy makers, professionals and researchers working in the area of economics, finance, accounting and auditing. The editor in chief of JMML invites all manuscripts that cover theoretical and/or applied researches on topics related to the interest areas of the Journal.

Editor-in-Chief

Prof. Dilek Teker

Editorial Assistant

İnan Tunc

JMML is currently indexed by

EconLit, EBSCO-Host, Ulrich's Directiroy, ProQuest, Open J-Gate, International Scientific Indexing (ISI), Directory of Research Journals Indexing (DRJI), International Society for Research Activity (ISRA), InfoBaseIndex, Scientific Indexing Services (SIS), TUBITAK-DergiPark, International Institute of Organized Research (I2OR), SOBIAD.

Ethics Policy

JMML applies the standards of Committee on Publication Ethics (COPE). JMML is committed to the academic community ensuring ethics and quality of manuscripts in publications. Plagiarism is strictly forbidden and the manuscripts found to be plagiarised will not be accepted or if published will be removed from the publication.

Author Guidelines

All manuscripts must use the journal format for submissions.
Visit www.pressacademia.org/journals/jmml/guidelines for details.

CALL FOR PAPERS

The next issue of JMML will be published in December 2019.

Submit manuscripts to

jmml@pressacademia.org or

<http://www.pressacademia.org/submit-manuscript/>

Web: www.pressacademia.org/journals/jmml



EDITORIAL BOARD

Klaus Haberich, Franklin University
Chieh-Jen Huang, Providence University
Meltem Kiygi Calli, Okan University
Muge Klein, Turkish-German University
Gary S. Lynn, Stevens Institute of Technology
Selime Sezgin, Bilgi University
Semih Soran, Ozyigin University
Husniye Ors, Gazi University
Mehmet Tanyas, Maltepe University
Tugba Orten Tugrul, Izmir University of Economics
Nimet Uray, Kadir Has University
Nan-yu Wang, Ta Hwa University of Science and Technology
Fu-Yun Wang, Ta Hwa University of Science and Technology
Ugur Yozgat, Marmara University

REFEREES FOR THIS ISSUE

Salih Aynural, Rumeli University, Turkey
Faik Celik, Kocaeli University, Turkey
Oyku Iyigun, Istanbul Commerce University, Turkey
Ahmet Incekara, Istanbul University, Turkey
Mehmet Marangoz, Mugla University, Turkey
Eldin Mehic, Sarajevo University
Suat Oktar, Marmara University, Turkey
Neslihan OZkan, Bristol University
Teng-Kun Wang, Institute of International Business Economics University of Essex, United Kingdom
Chuan-Chin Wang, Institute of Applied Economics University of Seville, Spain



CONTENT

Title and Author/s	Page
1. Information and communication technologies development index: regional analysis of Turkey <i>Tugba Guz</i> DOI: 10.17261/Pressacademia.2019.1126 JMML-V.6-ISS.3-2019(1)-p.128-135	128-135
2. Excellence in logistics performance: the effect of logistics capability, information systems capability and organizational learning <i>Cemal Zehir, Hacer Yildiz Ozturk</i> DOI: 10.17261/Pressacademia.2019.1127 JMML-V.6-ISS.3-2019(2)-p.136-145	136-145
3. Interactions between brand concept marketing and purchase intention via word-of-mouth: a case study of luxury branded goods <i>Hsiang-Hsi Liu, Chia-Mei Lo</i> DOI: 10.17261/Pressacademia.2019.1128 JMML-V.6-ISS.3-2019(3)-p.146-161	146-161
4. Investigation of the relationship between economic complexity level and human development level: comparison of developed and developing countries <i>Semanur Soyuyigit, Ercan Eren, Elife Akis</i> DOI: 10.17261/Pressacademia.2019.1129 JMML-V.6-ISS.3-2019(4)-p.162-174	162-174
5. The impact of power and relationship quality on value creation and appropriation in buyer-supplier relationships: the case of Moroccan companies. <i>Mdarhri Alaoui Saad1, Amine Nouredine</i> DOI: 10.17261/Pressacademia.2019.1130 JMML-V.6-ISS.3-2019(3)-p.146-161	175-196
6. How the shift to omni-channel commerce strategy aids a furniture retailer's competitive differentiation: the case of xxx Lutz in Austria. <i>Lisa Maria Wieser, Yung-Shen Yen</i> DOI: 10.17261/Pressacademia.2019.1131 JMML-V.6-ISS.3-2019(4)-p.162-174	197-203



INFORMATION AND COMMUNICATION TECHNOLOGIES DEVELOPMENT INDEX: REGIONAL ANALYSIS OF TURKEY

DOI: 10.17261/Pressacademia.2019.1126

JMML-V.6-ISS.3-2019(1)-p.128-135

Tugba Guz

Istanbul Yeni Yuzyil University, Department of Health-Care Management, 34010, Istanbul, Turkey.

tugbaguz@gmail.com, ORCID: 0000-0003-1644-7803

Date Received: June 15, 2019

Date Accepted: September 14, 2019

To cite this document

Guz, T., (2019). Information and communication technologies development index: regional analysis of Turkey. Journal of Management, Marketing and Logistics (JMML), V.6(3), p.128-135.

Permemant link to this document: <http://doi.org/10.17261/Pressacademia.2019.1126>

Copyright: Published by PressAcademia and limited licenced re-use rights only.

ABSTRACT

Purpose - In this study, the ICT development level of Turkey is aimed to evaluate. To this end, ICT development Index (ICTDEV-I) calculated for Turkey-wide and 12 regions from the years of 2013 to 2017 separately for each year. Then, comparative analysis and recent situation analysis are performed.

Methodology - Following the methodology used by the International Telecommunication Union (ITU), Factor Analysis is used and the Principal Component Analysis method is chosen to calculate the ICTDEV-I and to determine the weight of each indicator.

Findings- The regions are ranked according to the calculated index values. ICTDEV-I values of 12 regions are increased within five years.

Conclusion- Within five years, there has not a considerable change in the index ranking of the regions, and many regions have kept their place in the index. Considering the ICTDEV-I values of the regions, while Istanbul has the highest value, the Southeast Anatolia Region has the lowest value.

Keywords: Information and communication technologies, ICT Development Index, region, technology, human capital.

JEL Codes: O12, O33, O34

1. INTRODUCTION

Information and Communication Technologies (ICT) that have a positive effect on the economic and social structures of countries has become an important tool for global, national and regional development. However, the effects of the developments in these technologies on the economic and social structure may differ between regions or countries. These differences are related to the socioeconomic levels of individuals, households, regions or countries and affect the ICT usage and access (OECD, 2001).

In this direction, in a country, it has become necessary to establish a technical infrastructure and an ICT ecosystem to enable each region to benefit from these technologies. Thus economic growth and sustainability through ICT can be provided (Isik, Kilinc, 2013). In order to constitute this system and benefit from ICT at the macroeconomic level, it is necessary to penetrate of ICT to economic and social life as a whole.

In this context, it should be aimed to create a appropriate infrastructure that will enable all regions to make effective use of these technologies instead of having ICT in only certain regions within the country. For this purpose, it may develop a strategy that recognizes and encompasses all segments of society. In this strategy, increasing internet access in public places, to ensuring widespread use of ICT by the private sector, to reducing internet access prices, to integrating ICT into private, public and international sectors, providing adequate distribution of broadband network systems to cities or regions may be taken into consideration. All of these will lead to regional development and increase the level of ICT development of the countries.

Factors such as access to ICT, usage of technology and adequate human capital accumulation are considered as indicators of the development of ICT in an economy (Taban, 2010). Hence, these issues are given importance at the level of national and global. Within this scope, various statistics and reports on ICT are published by international organizations such as UN, OECD, IMF, UNESCO, ITU.

Measuring the Information Society Report is one of these reports that published annually by the International Telecommunication Union since 2009 to monitor the development of countries in ICT and make a comparison between them. In the report, countries are evaluated within the scope of ICT Development Index (ICT Development Index, IDI) which is calculated with three sub-indices as called ICT access, usage, and skills. This sub-indexes are involved 11 indicators. In the index, the ICT development of countries over time is examined globally and regionally and digital differences between them are revealed (ITU, 2017).

In this study, following the methodology used by ITU, the ICT development level of Turkey is aimed to evaluate. To this end, ICT development Index calculated for Turkey-wide and 12 regions (expressed as Level 1) from the years of 2013 to 2017 separately for each year. In this respect, comparative analysis and recent situation analysis are performed.

In the study, considering ICT development of Turkey and its dynamics, aimed to determine which indicators should be given more weight to be used in the index and what stage it is compared to other countries. For this purpose, the economic, social and political infrastructure of Turkey to the creation of appropriate growth models and suggestions are made concerning the determination of corresponding policies.

The rest of the study is organized as follows. A brief review of the empirical literature about the effects of ICT on the countries and regions is provided in section two. The data set and methodology is given in third section. Findings and discussions are mentioned in the fourth section. These sections are followed by the conclusion part.

2. LITERATURE REVIEW

Along with the increasing the share of ICT from national production, many studies in the literature analyze the economic and social effects of ICT on both countries and regions with various methods. As is these studies are in the form of reports prepared by international organizations, it can be in the form of academic studies examining the countries at national and global levels.

Taso et al (2015) calculated the ICT Development Index, annually calculated by the ITU, for 12 regions of Turkey expressed as level 1. They investigated the digital divide between the regions using the years of 2012 data and evaluated the recent situation of the digital divide in Turkey. As a result of their study, they found that there are digitally differences between all the regions of Turkey. They indicated that a crucial digital gap especially among the east and west parts of Turkey.

Malisuwan et al. (2015) considered the dynamics of Thailand proposed a modified model of ICT Development Index (IDI) to bring Thailand to be an ICT leader in ASEAN. In this regard, they determined the weakness points of ICT development in Thailand and found that 5 weak indicators out of 11 weak indicators. They also predicted that Thailand can be the first rank in the ICT development ranking among the ASEAN countries in 2020.

Erdil et al. (2015) considered the current state of the ICT sector in the region of Ankara in Turkey. They aimed to prepare an efficient strategy and policies in terms of regional development. The results of their study, they indicated that the province of Ankara (capital of Turkey) has development potential in the ICT sector.

Katz et al. (2013) composed an index called "Digitalization Index" in their study. In this index, they demonstrated the digital progress of 184 Latin American countries, between the years of 2004-2011. When they creating the index, they used six sub-indexes as ubiquity, affordability, reliability, speed, usability, and skill. They indicated that these sub-indexes contained 24 sub-indicators. They divided the 184 counties into four categories as constrained, emerging, transitional and advanced in the index. Consequently, they found that the Latin American region is relatively fast in increasing the level of digitalization and that there are significant differences between countries. They also stated that the difficulties faced by each of the countries which are divided into four categories in the index are different.

Sen and Akdeniz (2012) considered the digital divides in Turkey from various aspects and they compared the performance of Turkey and OECD countries in ICT usage. They found that despite significant progress of Turkey in the ICT, it's performance remained quite weak versus OECD countries. Furthermore, they indicated that there is a distinct difference in terms of the digital divide in urban and rural regions of Turkey.

Bankole et al. (2011) analyzed the productivity of ICT usage in four regions (SADC, ECOWAS, North and East Africa) that involved 28 countries in Africa, using the data envelopment analysis (DEA). In their study, they aimed to determine which regions are effective in ICT usage and the factors affecting ICT usage. In this sense, they concluded that ICT usage in Africa change among the regions and that the ICT usage is determined by infrastructure accessibility and the cost of ICT services.

3. DATA AND METHODOLOGY

In this study, following the ITU methodology, the level of ICT Development in Turkey-wide and 12 regions of Turkey (express level-1) are aimed to evaluate. To that end, the ICT Development Index calculated for Turkey-wide and 12 regions (level-1) from the years 2013 to 2017 separately for each year. At the result of these calculations, the comparative analysis is made and that evaluated the current situation. The regions considered in the study separated according to the Nomenclature of Territorial Units for Statistics (NUTS). These regions are classified as Istanbul (TR1), West Marmara (TR-2), Aegean (TR3), Eastern Marmara (TR4), Western Anatolia (TR5), Mediterranean (TR6), Central Anatolia (TR7), Western Black Sea (TR8), Eastern Black Sea (TR9), Northeast Anatolia (TRA), Middle East Anatolia (TRB), and Southeastern Anatolia (TRC).

The data used to determine the ICT development of Turkey gathered from "Annual Statistics Bulletin on Provincial Level for Electronic Communication Sector" prepared by Information and Communication Technologies Authority of Turkey (ICTA, 2018) and "Information and Communication Technologies Usage in Households and by Individuals Survey" prepared by Turkish Statistical Institute (TSI, 2013-2017). The data obtained is regulated from 2013 to 2017 for each year separately. As the data gathered from ICTA are published at the provincial level, data are grouped on the basis of NUTS-1 (Level-1).

The data used to determine the ICT Development of 12 regions of Turkey and Turkey-wide and the resources used to reach these data are given in Table 1. Distance to reference measure is used to normalize the data. The reference measure is the ideal value accessible for each indicator (similar to a goalpost). This value is taken as 100 except for the five indicators in the index in order to apply the data in the ICT Development Index at the national or regional level. The weight of each of the 11 indicators that equally weighted by ITU is recalculated using the weighting methods of the ITU. In order to calculate the index and to determine the weight of each indicator, one of the dimension reduction methods, Factor Analysis is used. The Principal Component Analysis is chosen in this analysis. In these methods, the variance explanation percentages and the values of the factor loadings are used to calculate the weight of each of the 11 indicators in the index. The weight of each indicator is calculated according to the results obtained from the factor analysis which explained the relative importance of the indicators in each subgroup (Access, Use, Skills sub-indices) in the index.¹

Table 1: Dataset and Resources

ICT Development Index	Dataset and Resources
ICT Access	
1- Fixed telefon subscriptions per 100 inhabitants	ICTA
2- Mobile-cellular telephone subscriptions per 100 inhabitants	ICTA
3- International internet bandwidth (bit/s) per internet user	ITU
4- Percentage of households with a computer	TSI
5- Percentage of households with internet access	TSI
ICT Use	
6- Percentage of individuals using the internet	TSI
7- Fixed-broadband subscriptions per 100 inhabitants	ICTA
8- Active-mobile broadband subscriptions per 100 inhabitants	ICTA
ICT Skills	
9- Adult Literacy Rate	
10- Secondary gross enrolment ratio	TSI
11- Tertiary gross enrolment ratio	

¹As a result of the factor analysis, the weights of each indicator are calculated following the ITU methodology. First, the component loadings are squared and divided by the share of variance explained by the component. Obtained results are multiplied by the ratio of the variance explained by the component and total variance. Then, the derived weights are rescaled to sum up to 100 to increase comparability (ITU, 2009).

The results obtained from the Principal Component Analysis are given in Table 2.

Table 2: Results of Principal Component Analysis

	Eigenvalues	Share of variance explained (%)	Cumulative share of variance explained (%)
ICT Access			
Component 1	3.986	79.721	79.721
Component 2	0.591	11.824	91.546
Component 3	0.287	5.737	97.282
Component 4	0.085	1.691	98.973
Component 5	0.051	1.027	100.000
KMO / Bartlett's Test	0.71 / Ch-Sq (49.568)	(p-value = 0.000)	
ICT Use			
Component 1	2.719	90.618	90.618
Component 2	0.230	7.678	98.296
Component 3	0.051	1.704	100.000
KMO / Bartlett's Test	0.73 / Ch-Sq (31.551)	(p-value = 0.000)	
ICT Skills			
Component 1	2.686	89.517	89.517
Component 2	0.206	6.857	96.374
Component 3	0.109	3.626	100.000
KMO / Bartlett's Test	0.75 / Ch-Sq (25.776)	(p-value = 0.000)	

The results obtained from Factor Analysis for 12 regions, the calculated weights for each indicator, and ideal values are given in Table 3. The data of the 10 indicators in Table 3 are obtained from TSI and ICTA. Because the data is not available for the remaining indicator (International Internet Bandwidth (bit/s) per internet users), the data related to this indicator is obtained from Turkey's ICT Development Index value in the ITU "Measuring the Information Society" reports between the years 2010-2016.

In this respect, the ICT Development Index value of the 12 regions calculated by using the ideal values applied in the normalization process of the data and the weights calculated in Table 3. In the calculation of the final index, following the ITU methodology, equal weight is given to each of the sub-indices of ICT access and ICT usage as 40%. Because ICT skills sub-index is based on the proxy indicators, the weight is given as 20% for this indicator. In the final stage, the weights of the sub-indices are collected and the index value of each region is calculated.

Table 3: Component Loadings and Weights for Indicators Used to Compute ICT Development Index of 12 Regions (Level-1)

	Component Loadings	Ideal Value	Indicator Weights (%)	%
ICT Access				
1- Fixed telephone subscriptions per 100 inhabitants	0.838	25	0.19	40
2- Mobile-cellular telephone subscriptions per 100 inhabitants	0.965	120	0.23	
3- International internet bandwidth (bit/s) per internet user	0.840	4.83	0.17	
4- Percentage of households with a computer	0.922	100	0.22	
5- Percentage of households with internet access	0.892	100	0.20	
ICT Use				
6- Percentage of individuals using the internet	0.965	100	0.34	40
7- Fixed-broadband subscriptions per 100 inhabitants	0.972	20	0.35	
8- Active-mobile broadband subscriptions per 100 inhabitants	0.917	100	0.31	
ICT Skills				
9- Adult Literacy Rate ²	0.963	100	0.35	

²The adult literacy rate indicator is used instead of the mean years of schooling ratio since the differences between regions are thought to be better expressed.

10- Secondary gross enrolment ratio	0.934	100	0.32	20
11- Tertiary gross enrolment ratio	0.940	100	0.34	

When calculating the index value of the regions, the indicator values of the regions are divided into ideal values and multiplied by the weight of each indicator. The obtained values are collected and are multiplied by the weights of each sub-index. Then, the obtained values for each sub-index are collected and are multiplied by 10. Thus, the index value of a region is found.

ICT Development Index of Turkey-wide is created utilizing weights calculated for the 12 regions as expressed Level 1 between the years 2013-2017. The data of Turkey-wide is obtained from the TSI and ICTA and organized separately for five years. The organized data of Turkey-wide for the years 2013-2017 are given Table 4 as comparatively.

Table 4: The Organized Data of Turkey-wide for the years 2013-2017

Turkey-wide		
ICT Access	2013	2017
1- Fixed telephone subscriptions per 100 inhabitants	17.68	13.66
2- Mobile-cellular telephone subscriptions per 100 inhabitants	90.86	96.40
3- International internet bandwidth (bit/s) per internet user	4.81	4.83
4- Percentage of households with a computer	49.90	56.60
5- Percentage of households with internet access	49.10	80.70
ICT Use		
6- Percentage of individuals using the internet	48.90	66.80
7- Fixed-broadband subscriptions per 100 inhabitants	10.95	14.76
8- Active-mobile broadband subscriptions per 100 inhabitants	31.53	70.47
ICT Skills		
9- Adult Literacy Rate	95.40	96.18
10- Secondary gross enrolment ratio	83.67	87.17
11- Tertiary gross enrolment ratio	16.21	21.75

4. FINDINGS AND DISCUSSIONS

ICT Development Index values of 12 regions among the years of 2013-2017 are given in Table 5 comparatively. It is seen that, among the years of 2013-2017, ICT Development Index values of all regions included in Level-1 increased. However, within five years, there is no considerable change in the index ranking of the regions, and many regions have maintained their place in the index ranking. In this period, while Istanbul Region (TR1) index value is 7.41 in 2013, this value reached 8.70 in 2017. Thus, Istanbul has the highest ICTDEV-I value in the 12 regions both the years 2013 and 2017. The provinces such as TR5, TR4, TR3 regions where Ankara, İzmir, Eskisehir, Bursa, and Kocaeli are located follow the region of Istanbul.

Table 5: ICT Development Index (ICTDEV-I) Values for 12 Regions (Level-1)

Regions		2017 Rank	ICTDEV-I 2017	2013 Rank	ICTDEV-I 2013
TR1	Istanbul	1	8.70	1	7.41
TR5	Western Anatolia	2	7.60	2	6.21
TR4	Eastern Marmara	3	7.08	3	5.86
TR3	Aegean	4	7.04	5	5.48
TR2	West Marmara	5	6.90	4	5.65
TR6	Mediterranean	6	6.64	6	4.83
TR8	Western Black Sea	7	6.42	8	4.76
TR7	Central Anatolia	8	6.38	9	4.74
TR9	Eastern Black Sea	9	6.34	7	4.83
TRA	Northeast Anatolia	10	5.31	10	3.76
TRB	Middle East Anatolia	11	5.19	11	3.42
TRC	Southeastern Anatolia	12	5.09	12	3.34

Considering the data brought to the level of NUTS-1, it can be said that the mobile-cellular telephone subscriptions per inhabitants, percentage of households with internet access, percentage of individuals using the internet, and active mobile broadband subscriptions per inhabitants are increased in almost all regions notably TR1 (Istanbul) in five years.

Among these indicators, the increase in mobile broadband subscription in all regions are remarkable. While the index value of this indicator is 29.47 in 2013, it is increased 66.95 in 2017. In this case, it can be concluded that networks are expanded to almost cover the entire population and that have high-speed networks and broadband services, especially in certain regions.

It is observed that there are differences in the fixed telephone subscriptions among the regions and there are serious decreases especially between from the West Regions to the Eastern Regions in this indicator. This decline in fixed telephone subscription is reduced the number of subscribers per person and obstructed the expansion of fiber optic broadband and fixed broadband (UCTEA, 2016). In the index, compared to other indicators, this indicator has a lower value and the difference between regions supports this result.

It is seen that the Southeast Anatolia Region (TRC) has the lowest value in the index. Inter-regional socio-economic factors are effective in differences that in the index values between the east and west of Turkey. Access to ICT and usage of these technologies is further in Western regions depending on the income level, educational status, and population density. The fact that the infrastructure in these regions is more developed than in the eastern regions is also effective in this difference.

The increase in the average index values of the regions between 2013-2017 is shown in Table 6. In this respect, the average of ICTDEV-I of 12 regions increased from 5.02 to 6.56 in five years and increased by 23.48%.

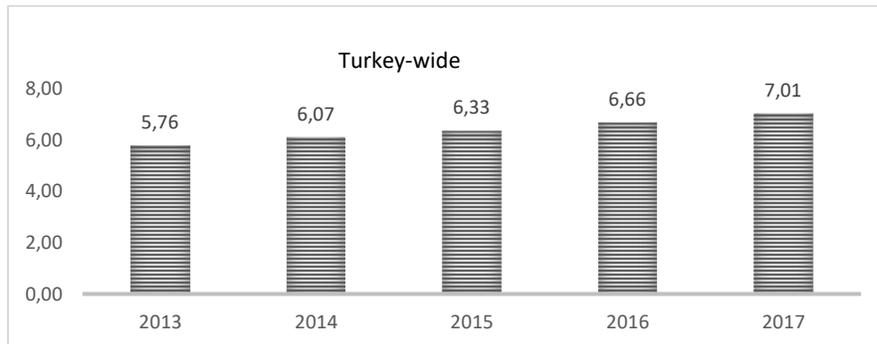
Table 6: ICTDEV-I of 12 Regions (Level-1) and Change Values of the Sub-Indices between the Years 2013-2017

ICTDEV-I of 12 Regions (Level-1)	Average Value	Average Value	Change in Average Value in 2013-2017	
	2013	2017	Difference	%
ICTDEV-I	5.02	6.56	1.54	23.48
Access sub-index	6.24	6.48	0.24	3.85
Use sub-index	3.08	6.52	3.44	111.7
Skills sub-index	6.46	6.78	0.32	4.95

Considering the average changes in the sub-indices, within five years, the access sub-index is 3.85%, the use sub-index is 111.7%, skill sub-index is increased by 4.95%. In this period, the average value of the use sub-index increased faster than the other two sub-indices. Especially increases in mobile broadband penetration and individuals using the internet have an important place among the reasons for this increase. Mobile broadband penetration and an increase in mobile devices lead to more efficient internet access and use.

The skill sub-index increased less than the other two sub-indices, as previously mentioned, the indicators that make up this sub-index consist of proxy indicators and less weight than the other two sub-indices (20%). In addition to this, the fact that the education indicators tend to act more slowly than the indicators in the access and use sub-indices also explains that the average value of this index is lower than the other two indices.

ICT Development Index of Turkey-wide is composed by utilizing the weights calculated for the regions of Level-1 between the years 2013-2017. The ICT Development Index value of Turkey-wide increased from 5.76 in 2013 to 7.01% in 2017 and showed an increase of 21.70% within five years.

Figure 1: ICTDEV-I Value of Turkey-wide, 2013-2017

Considering the data organized for Turkey-wide, it is seen that, mobile phone subscriptions value which is one of the five indicators that in ICT access sub-index is higher than the other indicators (Table 4). This indicator that has a higher value according to the other five indicators affects the ICT use and ICT skills sub-indexes in Turkey positively. The number of young population with the skills to use new technologies in Turkey also supports this conclusion. However, telecommunications services are offered to consumers at relatively affordable prices in Turkey that has a relatively large telecommunications market. Operators support the ICT use and ICT access through various campaigns for different segments notably young people, students, public officials, or retirees, and contribute to the development of the ability to use these technologies. In the ICT access sub-index, the increases in the percentage of households with internet access indicator in five years appear to be remarkable. The indicator value increased from 49.10 in 2013 to 80.70 in 2017, representing an increase of 64.36% (Table 4). This increase in the five-year period means that infrastructure investments for internet access are given importance.

In the ICT usage sub-index, the value of mobile broadband subscriptions per 100 inhabitants increased from 31.53 in 2013 to 70.47 in 2017, representing an increase of 123.50%. Among the reasons why this indicator is higher than the others, firstly, the 3G services launched in 2009, high-speed internet (Long Term Evolution; LTE) launched in 2016, and the rapid growth in the mobile bandwidth market that represents the capacity of network speed used, and expansion of networks to cover almost the entire population can be demonstrated.

Although the rate of fixed-broadband subscriptions per inhabitants in the ICT use index is lower than the others, Turk Telecom that is the market leader and has the largest fiber infrastructure continues to expand and investments. In addition, most of the fixed broadband connections can be implemented via XDSL with a growing number of fiber and cable subscriptions (ITU 2017:2).

5. CONCLUSION

In this study, following the ITU methodology, the level of ICT Development in Turkey-wide and 12 regions of Turkey (express level-1) are aimed to evaluate. To that end, the ICT Development Index calculated for Turkey-wide and 12 regions (level-1) separately for each year from the years 2013 to 2017. As a result of these calculations, the comparative analysis is made and that evaluated the current situation.

According to the results of the analysis, ICT Development Index values of all the regions included in Level-1 is increased between the year 2013-2017. In this respect, the ICT Development Index average of the 12 regions is increased by 23.48% in five years. However, it can be said that, within five years, there is no considerable change in the index ranking of the regions, and many regions maintained their place in the index ranking.

In Turkey, information technology levels that are affected by the factors such as household income, age, gender, education level, occupation, settlement, and the use of these technologies is decreasing by going from the urban to rural areas and from west to east. The use of household information technologies also increases due to increases in education and income levels (Selim, Balyaner, 2017).

Turkey with high growth potential has the latent to increase the ICT share in this growth. The presence of a relatively large telecommunications market; the increase in the number of broadband subscribers and data communication traffic with 4.5G technology, which is becoming widespread in 2016; the length of the fiber optic cable across Turkey increased by 54% between

2012-2017 to reach 325 thousand km (ICTA, 2016); preparation of Information Society Strategy and Action Plans; and the young population with the ability to use new technologies have an impact on this potential.

Turkey should increase its investments towards these technologies so as to cover all the regions in order to increase its existing potential and to reach the level of developed countries in ICT. Nevertheless, it should be increased the share of ICT, R&D, and especially education in GDP.

In order to ensure access to ICT and the widespread and equally use of these technologies in all regions decreasing the costs such as the communication expenses, internet services, lowering the cost of devices such as mobile phones, tablets, computers, and reducing the taxes on ICT services and devices will affect the level of ICT development positively.

REFERENCES

- Bankole, F. O. Muata-K., Btyson-O. Brown, I. (2011). ICT infrastructure utilization in Africa: Data envelopment analysis based exploration. *Proceedings of SIG GlobDev AMCIS Workshop*. 1-19.
- Erdil, E. Pamukçu, M. T. Akcomak, İ. S. (2015). Ankara İli Bilgi ve İletişim Teknolojileri Sektörü Yenilik Kapasitesi ve Üniversite-Sanayi İşbirlikleri. *Science and Technology Policy Studies Center (STPS) Working Papers*. 15(01): 1-28.
- Information and Communication Technologies Authority of Turkey (ICTA). (2018). Annual Statistics Bulletin on Provincial Level for Electronic Communication Sector. 1-91.
- International Telecommunication Union (ITU). (2017). Measuring The Information Society Report 2017. (1): 1-170.
- International Telecommunication Union (ITU). (2017). Measuring The Information Society Report 2017. (2): 1-262.
- International Telecommunication Union (ITU). (2009). Measuring The Information Society, The ICT Development Index. 1-97.
- Isik, N. Kilinc, E. C. (2013) "Knowledge economy and economic growth: An application on OECD countries". *Akdeniz İİBF Dergisi*. (26): 21-54.
- Katz, R. L. Koutroumpis, P. Callorda, F. (2013). The Latin American path towards digitization. *Info, Emerald Group Publishing Limited*. 15 (3): 6-24. DOI: 10.1108/14636691311327098
- Malisuwan, S. Milindavanij, D. Sivaraks, J. Tiamnara N. (2015). A modified model of ICT Development Index (IDI) for Thailand to achieve the ICT leader in ASEAN. *International Journal of Advanced Research in Engineering and Technology (IJARET)*. 6 (12): 39-48.
- Organization for Economic Co-Operation and Development (OECD). (2001). Understanding The Digital Divide. 5.32.
- Sen, A. Akdeniz, S. (2012). Coping with digital gap: OECD trends and Turkey. *The Journal of Knowledge Economy & Knowledge Management*. VII (I): 53-75.
- Selim, S. Balyaner, İ. (2017). Investigation of the factors determining the number of information technology products owned by households: A count data model. *Mehmet Akif Ersoy University, Journal of Social Science Institution*. 9 (22): 428-454.
- Taban, S. (2010). İcsel Buyume Modelleri ve Türkiye. Bursa: Ekin Yayınevi
- Taso, S. Atlı, S. M. Mardikyan, S. (2015). Digital divide among the region of Turkey. *The Journal of Knowledge Economy & Knowledge Management*. X (I): 41-49.
- The Chamber of Electrical Engineers (UCTEA). (2016) "Bilgi ve iletişim teknolojileri yoksulluğu", *Bilgi ve İletişim Teknolojileri Raporu*: 1-86.
- Turkish Information and Communication Technologies Authority (ICTA). (2016). Elektronik haberleşme sektörüne ilişkin il bazında yıllık istatistik bülteni. 1-91.
- Turkish Statistical Institute (TSI). (2013-2017). Information and Communication Technologies Usage in Households and by Individuals Survey. Micro Dataset.



EXCELLENCE IN LOGISTICS PERFORMANCE: THE EFFECT OF LOGISTICS CAPABILITY, INFORMATION SYSTEMS CAPABILITY AND ORGANIZATIONAL LEARNING

DOI: 10.17261/Pressacademia.2019.1127

JMML-V.6-ISS.3-2019(2)-p.136-145

Cemal Zehir¹, Hacer Yildiz Ozturk²

¹Yildiz Technical University, Department of Business Administration, 34349 Besiktas, Istanbul, Turkey

cemalzehir@gmail.com, ORCID: 0000-0003-2584-4480

²Yildiz Technical University, Department of Business Administration, 34349 Besiktas, Istanbul, Turkey

hacer.yildiz@gmail.com, ORCID: 0000-0002-1679-4883

Date Received: June 22, 2019

Date Accepted: September 18, 2019

To cite this document

Zehir, C., Ozturk, H. Y., (2019). Excellence in logistics performance: the effect of logistics capability, information systems capability and organizational learning. Journal of Management, Marketing and Logistics (JMML), V.6(3), p.136-145.

Permanent link to this document: <http://doi.org/10.17261/Pressacademia.2019.1127>

Copyright: Published by PressAcademia and limited licenced re-use rights only.

ABSTRACT

Purpose- The purpose of this paper is to explore the effect of organizational learning on logistics capability and information systems capability, how this relation is affected by the mediating role of information systems capability and finally their effect on the firm performance. For this reason, we also aim to examine the effect of information systems capability on logistics capability and their effect on the overall model.

Methodology- Easy sampling method is used in order to collect survey data. Data collected from manufacturing companies that are operating in Marmara Region in Turkey. We reached 353 companies and 1035 usable surveys. Exploratory factor analysis (EFA) was conducted to see if the observed variables theoretically loaded together and reliability values were evaluated as well as regression analysis, which is to define the direction of relations. SPSS modeling technic has been used in testing the hypotheses.

Findings- Organizational learning has a meaningful effect on Information Systems capability and Logistics capability. We also found the mediating role of Information systems capability on the relationship between Organizational learning and Logistics capability. In addition, Organizational Learning positively affects firm performance through information systems capability, logistics capability and logistics performance.

Conclusion- Managers, who want to have an excellence in logistics performance, should focus on creating an organization culture based on learning that is also supported by key capabilities. A successful firm performance is dependent on a successful logistics performance. In order to achieve this, companies not only must be learning oriented, but also must provide strong information systems capability as well as logistics capability. Logistics excellence is a powerful competence and source of competitive advantage especially for manufacturing companies and considered as a strategic resource that enables new strategic moves in the market.

Keywords: Logistics performance, logistics capability, information systems capability, resource based view, organizational learning.

JEL Codes: M10, M15, M19

1. INTRODUCTION

Economic uncertainties, fast changing global dynamics, cultural interactions as well as globalization and technological innovations have literally changed the face of competition in business arena. Companies are not only competing on their products, prices or their positions in the market, but rather; they are competing on capability level in today's world which differentiate them on a very specific level compared to the past. The source of sustainable competitive advantage has been one of the most fundamental questions that is tried to be answered in strategic management area. In this context, as one of the most referred theories; Resource-based view (RBV) explains that achieving a sustainable competitive advantage mostly depends on the elements that are affecting organizations inside other than focusing on outside effects. The most important factors are resource and capability base of organizations that distinguish themselves from each other and make a difference. As Helfat and Peteraf (2003) argue,

heterogeneous structure of companies cannot be ignored while explaining the resources and capabilities. They argue that companies cannot achieve a competitive advantage without understanding this multidimensionality of resources and capabilities.

A company's position, which allows achieving a competitive advantage amongst its competitors, depends on its idiosyncratic resources, capabilities and the relationships it establishes for the control of these capabilities. In resource-based theory, companies are considered to have a sustainable competitive advantage, if they are able to create a higher marginal value than an average firm in the sector they are in and if their strategy is not adopted and imitated by other firms. What makes the strategy difficult to imitate is the unique and differentiated capabilities which are customized in the direction of organization's needs.

The success of companies in strategic capabilities is highly related with learning through repetition. As this concept is referred as organizational routines (Nelson and Winter, 1982), routines enable the creation of capabilities in organizations. A capability is actually based on multiple routines that are interacting with each other and an organization consists of a large network of routines (Nelson and Winter, 1982). Organizational learning addresses how organizations change as they acquire knowledge both from inside and outside of the organization (Celuch, Kasouf and Peruvemba, 2002). While its roots go back to the studies of researchers such as Argyris and Schon (1978) and Fiol and Lyles (1985), the notion of learning organizations started to appear by 80s. In the relevant literature, organizational learning is regarded as one of the key strategic capabilities for competitive advantage (Bapuji and Crossan, 2004; Santos-Vijande, López-Sánchez and Trespalacios, 2012). In our study, we develop a model indicating the effect of organizational learning on logistics capability and information systems capability.

Prior researches indicate many relations between organizational learning and information systems as well as organizational learning and logistics. In Agarwal, Krudys and Tanniru's study (1997) creating an information system organization that is learning oriented is suggested to become more adaptive and responsive to change. Andreua and Ciborrab (1996) emphasize the learning aspects of capability development and explore how information technology can contribute to it. Bell et al., (2014) suggest that applying the logistics information systems evaluation framework to an in-process external technology integration effort can facilitate organizational learning and also affect the success of this technology integration overall. Canessa, Morales and Maldifassi (2017) posit that the impact of information technologies (IT) on the performance of firms will differ depending on the main usage of the IT system with organizational learning: for exploration or for exploitation. They found a positive impact of using IT for exploitation on organizational performance. In addition, Panayides (2007) indicate that organizational learning has a positive influence on the improvement of logistics service effectiveness and firm performance. Shang (2009) found a significant positive relationship between organizational learning capability and financial performance in third-party logistics providers. Tippins and Sohi (2003) try to find an answer whether organizational learning has a significant role in determining the outcomes of IT or not. They found that organizational learning plays a significant role in mediating the effects of IT competency on firm performance.

The purpose of this paper is to explore the effect of organizational learning on logistics capability and information systems capability, how this relation is affected by the mediating role of information systems capability and finally their effect on the firm performance. While there are many researches examining organizational learning and information systems or information systems capability relationship which are mentioned above, there is a gap in the literature especially in the area of organizational learning and logistics capability relationship together. Logistics activities are one of the main activities that require a coordinated communication with other parties that are outside of the organization and information systems enable an infrastructure for this purpose as well. For this reason, we also aim to examine the effect of information systems capability on logistics capability and their effect on the overall model. We chose to conduct this research on manufacturing companies operating in the following sectors; automotive, electronic machinery and technology, textile, food, drink and tobacco, metal goods, chemical and petroleum, pharmaceutical and wood. Our research is of a big importance because there are not many researches that are analyzing capabilities and performance measures like logistics focusing on such a wide range of sectors framework. Besides, even though there are many researches indicating the relationships between organizational learning together with different capabilities; there are not many studies focusing on logistics capability and information system capabilities together. We also aim to fill this gap in the literature with our careful implementation on the manufacturing companies operating in Turkey.

We first develop a conceptual starting point for our research based on the resource-based view of the firm and explain capabilities and then organizational learning concept in detail. Thereafter, we outline the methodology for the research; after giving information about sample and data collection, we explain our research model and related hypotheses. Our analyses are discovered empirically and explained in findings. Finally, conclusions are drawn and theoretical, managerial and research implications are discussed.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Resource-Based View and Organizational Capabilities

Resource-based view theory (RBV) is based on the view that companies are heterogeneous since they have different resources and capabilities even if they operate in the same industry (Wright and McMahan, 1992); unlike positioning strategy (Porter, 1985), which suggests that firms are similar in terms of the strategic resources they have. Besides resource heterogeneity, RBV assumes that the resources have immobility, meaning that the resources cannot change hands unless the firms trade with each other (Peteraf, 1993). These are the resources that are losing their strategic functions once transferred to the other companies (Boxall, 1996). The bottom line is not only having the ownership of a particular resource, but rather; the main value-creating element is also having human capital, experienced employees who has required capabilities and are able to use these resources efficiently and effectively. By this way, individual resources gain an organizational manner.

According to the resource-based view, resources are of great importance in terms of achievement of a sustainable competitive advantage. Another issue that is as important as achieving a competitive advantage is to keep this competitive advantage in a long-term and sustainable manner. The reason is that existing resources and capabilities face with depreciation and become more likely to be imitated by competitors over time. As the resources can be separated as tangible and intangible resources (Barney, 1991), it is possible to say that it is easier to imitate tangible resources than the intangible ones. For this reason, intangible resources have a more critical value in achieving competitive advantage and capabilities are seen one of the most critical intangible assets of organizations.

While the resources are the main elements of production processes, they are not adequate enough to create value in an organization on their own. Another factor that is required for the use of these resources with the desired efficiency is the organizational capabilities (Kaleka, 2002). According to RBV, there is a close relationship between the resources and capabilities. Resources are important if they create the capabilities that will contribute to the growth and continuous development of an organization. In addition, resources can be imitated or transferred easier than capabilities, because capabilities are mostly based on implicit knowledge. The developments in capabilities have been examined by many researchers within the framework of the resource based view in time (Ulrich, 1989; Collis, 1991; Amit and Schoemaker, 1993; Teece and Pisano, 1994; Grant, 1996; Winter, 2000; Helfat and Peteraf, 2003). As Barney (1991) defines, capabilities as those organizational characteristics that 'enable an organization to conceive, choose and implement strategies'. In another definition made by Collis (1994), organizational capabilities are "socially complex routines that determine the efficiency with which firms physically transform inputs into outputs".

2.1.1. Logistics Capability

Logistics capability is one of the most critically important capabilities especially for manufacturing firms that enables acquiring a competitive advantage in this global economic environment with high competition (Xu and Wang, 2012). The role of logistics capabilities becomes even more critical, when quality-based competition is intense and time is a vital determinant (Gligor and Holcomb, 2014). Competition level has become very specific in today's world; and it is possible to say that many manufacturing companies are competing in supply-chain level (Christopher, 2000). Since price and promotion changes may be more quickly duplicated now, organizations focused on delivering customer value through logistics as a means of remaining competitive (Mentzer, Flint and Hult, 2001). As a main factor to distinguish and so make some of them more successful amongst others, logistics capability has a strategic aspect related to improvement of operational effectiveness as well as operational performance. In addition, successful logistics activities cannot be thought without having a sustainable and healthy communication provided by information systems within the organization with third parties related to activities outside of the organization. Unlike many operational and organizational capabilities, logistics capability depends on outside factors as well as inside effects. Logistics excellence has, therefore, become a powerful competence and source of competitive advantage for many firms and considered as a strategic resource that enables new strategic moves in the market (Esper, Fugate and Davis, 2007).

This capability has been categorized in different ways by many researches. Mentzer, Min and Bobbitt (2004) identify four broad categories, which are customer service and logistics quality, low cost distribution and low cost supply, information sharing and information technology and coordination capabilities (internal and external coordination capabilities. On the other hand; Cho, Ozment and Sink (2008) identify 11 logistics capabilities; presale customer service, post-sale customer service, delivery speed, responsiveness to target, widespread distribution coverage, global distribution coverage, selective distribution coverage, low total cost distribution, delivery reliability, delivery information communication, and web-based order handling. Morash, Dröge and Vickery (1996) offer an alternative categorization of logistics capabilities based on two value disciplines: demand or customer-oriented approach and operations or supply-oriented approach.

2.1.2. Information Systems Capability

Companies have to use of communication both individually and organizationally in order to align their beliefs, attitudes and behaviors within the organization with the aims of the organization and to achieve the desired performance targets. For this reason, there is a need for a continuous, scientific and systematic communication system for multidimensional and environmental relations. Today, information system mechanisms provide the information and communication that organizations need.

Information transfer can be in individual, group or organizational level. Information systems help creation of a system that enable this transfer in an accurate and effective way within an organization. By 1990s, information systems began to be examined under Resource-based view theory. Information systems capability affects all of the interactions occurring that are vital to the realization of activities. The importance of information systems capability increase as it also allows to the transfer of tacit knowledge which is one of the main dimensions of organizational learning. As well as enabling knowledge management; the process of obtaining, storing, sharing and using information, it is also related with technology and innovation management.

2.2. Organizational Learning

Organizations are learning by encoding inferences from history into routines that guide behavior. Routines are based on interpretations of the past and they adapt to experience incrementally in response to feedback about outcomes (Levitt and March, 1988). It is always important to minimize uncertainties and unwanted incidents as much as possible in business world, because the greater the uncertainty, the more risks are exposed to. In order to manage this situation in a way that will keep companies clear of, it is highly in parallel with the correct and successful management of information in companies. Information is at the center of organizational learning, and by organization theorists it is regarded as one of the most significant strategic resources that is important at effective control and management in organizations (Grant, 1996). According to Miller (2002), information is a critical intangible resource that creates value for organizations. It is also possible to evaluate information under the capital resources of an organization (Barney and Clark, 2007).

In the context of knowledge-based theory, information is divided into two parts. These are; explicit knowledge known by everyone which also easily transferable and implicit knowledge that is in the minds of individuals, which is not easily obtainable and difficult to imitate (as cited in Nonaka, 1994). The awareness of the information that individuals have as implicit knowledge only arises when they are asked to express this information. Implicit knowledge is inherently difficult to express and convey. While it is comparatively easy to transfer explicit knowledge in a written way, implicit knowledge can be transferred by the presentation of how to do something by showing the movements step by step (Hatch and Cunliffe, 2013). As Fahey and Prusak (1998) explains: "tacit knowledge is the means by which explicit knowledge is captured, assimilated, created and disseminated". Companies use integration mechanisms such as rules, guidelines, routines and procedures to avoid communication problems created by implicit knowledge. At this point, the importance of a successful information system capability is clear since it allows communicating and enabling the flow of information effectively.

Knowing the existence of something and knowing how it is done are two different things. Nonaka (1994) examines this distinction, which reveals how knowledge has emerged, how it's being used and how its functions differ, as the epistemological dimension of organizational knowledge. At the stage of knowledge formation, ideas gain an organizational dimension after they begin to form in the minds of individuals. In other words, it is not possible to create information that is independent from the employees in an organization. This explanation is expressed as the ontology of organizational knowledge formation.

What is aimed with organizational learning is the adoption of a culture based on creation and use of information spread across the whole organization in order to achieve competitive advantage. In addition to closely monitoring customer needs, changes in the market and competitors' activities, this process involves acquiring and sharing information to develop new technologies for superior positions and innovations for new production compared to competitors.

3. RESEARCH METHOD

3.1. Sample and Data Collection

In our study, we used easy sampling method in order to collect our survey data. We applied face-to-face surveys to our applicants. Responses to the survey questionnaire were assessed on a five-point Likert Scale. Survey of the study was applied on production sectors in Marmara Region in Turkey. And 353 companies were reached and 1035 usable surveys have been obtained.

A big majority of the participants have a graduate degree and almost 65% of the companies are operating in international level. Companies are operating different manufacturing sectors, ranging from automotive to pharmaceutical and textile. Descriptive statistics of the respondents can be found in Table 1.

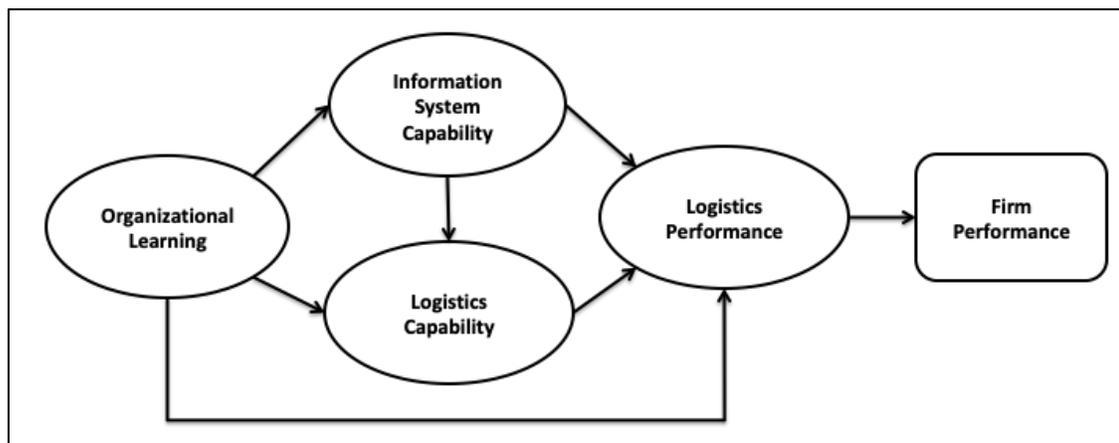
Table 1: Descriptive Statistics of the Respondents

Level of Managers	Top Executives (5.4%)	Medium Level Mn. (24.3%)	White-Collar (70.4%)
Education Level	Post Graduate (19.1%)	Graduate (63.5%)	Undergraduate (17.4%)
Industries	Food / Drink / Tobacco	Clothing / Textile	Chemicals / Petroleum
	Automotive	Base Metal / Stone Based	Machinery / Technology
	Wood / Paper / Printing	Pharmaceutical / Medical Tech.	Elect. Mach. / Other Manuf.
Field of Activity	Local (17.9%)	National (18.1%)	International (64.9%)
Gender	Men (57.8%)	Women (42.2%)	

3.2. Research Model and Hypotheses

This study is based on a field study where relationships between organizational learning, logistics capability and firm performance are explored as well as the mediating role of information systems capability on this relationship. We conducted this research on manufacturing companies that are operating industries such as; including automotive, machinery equipment & metal goods, chemical & petroleum, main metal and pharmaceutical sectors. We think that information systems capability and logistics capability are affected by organizational learning. In other words, organizational learning has a positive effect on these capabilities, which will also lead to a better logistics performance and so to a better firm performance. Research model and related hypotheses are as shown below.

Figure 1: Proposed Research Model



H1: Organizational learning positively affects information systems capability

H2: Organizational learning positively affects logistics capability

H3: Information systems capability has a mediating role on the relationship between organizational learning and logistics capability

H4: Organizational learning positively affects logistics performance

H5: Organizational learning positively affects firm performance through information systems capability, logistics capability and logistics performance

4. FINDINGS AND RESULTS

4.1. Analyses

In our survey questions, Information systems capability, Organizational learning, Logistics capability scales developed by Acar and Zehir (2009), logistics performance scale was developed by Chow et al. (1994), firm performance scale was adopted by Baker and Sinkula (1999), Lynch et al. (2000), Antoncic and Hisrich (2001), Zahra et al. (2002) and are used in this research. Exploratory factor analysis (EFA) was conducted to see if the observed variables theoretically loaded together and reliability values were evaluated. And SPSS modeling technic has been used in testing the hypotheses.

Table 2: Coefficient Alfa, Means, Standard Deviations and Correlations

	Means	SD	1	2	3	4	5	6	7
1. Number of Employees	1790	5571							
2. Year of Establishment	1987	23,4	-,442**						
3. Info. Systems Capability	3,94	0,54	,171**	-,140*	-,0877				
4. Organizational Learning	390	0,51	0,061	-,142*	,645**	-,0938			
5. Logistics Capability	3,83	0,54	,151**	-,176**	,557**	,640**	-,0902		
6. Logistics Performance	3,83	0,61	0,081	-,132*	,472**	,535**	,588**	-,0924	
7. Firm Performance	3,73	0,56	,138*	-,115*	,453**	,492**	,499**	,693**	-,0949

**p<0,01; *p<0,050; Pearson Correlation. **Correlation is significant at the 0.01 level (2-tailed). Values in parenthesis are Cronbach's Alfa

Table 3: Exploratory Factor Analysis, Rotated Component Matrix

Factor name	Factor Loadings			
<i>Information systems capability 1</i>	0,684			
<i>Information systems capability 2</i>	0,746			
<i>Information systems capability 3</i>	0,788			
<i>Information systems capability 4</i>	0,706			
<i>Organizational learning 1</i>		0,688		
<i>Organizational learning 2</i>		0,751		
<i>Organizational learning 3</i>		0,759		
<i>Organizational learning 4</i>		0,768		
<i>Organizational learning 5</i>		0,738		
<i>Organizational learning 6</i>		0,738		
<i>Organizational learning 7</i>		0,705		
<i>Organizational learning 8</i>		0,730		
<i>Organizational learning 9</i>		0,701		
<i>Logistics capability 1</i>			0,612	
<i>Logistics capability 2</i>			0,698	
<i>Logistics capability 3</i>			0,717	
<i>Logistics capability 4</i>			0,739	
<i>Logistics capability 5</i>			0,783	
<i>Logistics capability 6</i>			0,725	
<i>Logistics Performance 1</i>				0,646
<i>Logistics Performance 2</i>				0,650
<i>Logistics Performance 3</i>				0,765
<i>Logistics Performance 4</i>				0,760
<i>Logistics Performance 5</i>				0,623
<i>Logistics Performance 6</i>				0,751

<i>Firm Performance 1</i>					0,768
<i>Firm Performance 2</i>					0,810
<i>Firm Performance 3</i>					0,766
<i>Firm Performance 4</i>					0,763
<i>Firm Performance 5</i>					0,768
<i>Firm Performance 6</i>					0,753
<i>Firm Performance 7</i>					0,776
<i>Firm Performance 8</i>					0,713
<i>Firm Performance 9</i>					0,787
<i>Firm Performance 10</i>					0,696
<i>Firm Performance 11</i>					0,747
<i>Firm Performance 12</i>					0,768
Variance Explained	44,6	11,1	5,2	3,9	3,8
Notes: (i) Principal Component Analysis, (ii) Varimax with Kaiser Normalization: 0,947 (iii) Total Variance Explained (%): 68,982, Bartlett Test; df: ,666 p<0.001					

Correlation values between these variables are summarized in Table 2. As seen in the table there is not multicollinearity between dimensions. For the reliabilities of each factor, Chronbach’s alpha values are calculated and shown in the table. For a good internal consistency, Chronbach’s alpha value should be above 0.70 (Field, 2009) and all of the values are above this level.

When correlation results are examined, it is seen that all our hypotheses are accepted. Moreover, when the correlation relationship between demographic variables and research dimensions are examined it is confirmed that as employee numbers increase in an organization the perception regarding the availability of Information systems capability, Logistics capability, Logistics Performance and Firm Performance increases. This relationship is highest in the relationship with Information systems capability.

Exploratory factor analysis results related to the variables used in our study are given in Table 3. The lowest value for factor loadings is accepted as 0.50 (Hair et al., 2010) as it can be seen from Table 3, all of the factor loadings are above the desired level. Total variance explained is 68,92% for our research.

4.2. Results

In this study, regression analysis is also conducted to test the hypotheses and to define the direction of relations. The results of our hypotheses are shown in Table 4. According to the results of our analysis, *Organizational learning* has a meaningful effect on *Information systems capability* (B; 629***, Adjusted R2: ,396, Sig: ,001) and also *Logistics capability* (B; 641***, Adjusted R2: ,409, Sig: ,001) ,so H1 and H2 are accepted.

We also found the *mediating role of Information systems capability on the relationship between Organizational learning and Logistics capability* (B; 219***, Adjusted R2: ,433, Sig: ,001). As seen, this relationship is significant, so H3 is also accepted. The result of the forth hypothesis is also significant (B; 390***, Adjusted R2: ,392, Sig: ,001), so H4 is accepted. Finally, the results of H5 (B; 573***, Adjusted R2: ,504, Sig: ,001) also show that our last hypothesis is accepted. Besides, *logistics performance has a mediating role on this relationship*. One to one relationships between firm performance and other variables are shown in the correlation analysis. They are all statistically significant. To sum up, these results indicate that all of our hypotheses are accepted and the proposed model is valid.

Table 4: The Regression Results among Organizational Learning, Capabilities and Performance Variables

Independent Variables	Mediator Variables and Dependent Variables			Dependent Variables
<i>Organizational learning</i>	<i>Information systems capability</i>	<i>Logistics capability</i>	<i>Logistics Performance</i>	Firm Performance
<i>Organizational learning</i>	,629* **	F: 214,3 Adj. R2: ,396 Sig: ,001		

<i>Organizational learning</i>		F:224,2 Adj. R2: ,641* ** ,409 Sig: ,001		
<i>Organizational learning Information systems capability</i>		F:124,1 Adj. R2: ,499* ** ,219* ** ,433 Sig: ,001		
<i>Organizational learning Information systems capability</i>			,387 *** ,222 ***	F: 71,8 Adj. R2: ,306 Sig: ,001
<i>Org. learning Information systems capability Logistics capability</i>			,202** ,127 * ,390 ***	F:69,1 Adj. R2: ,392 Sig: ,001
<i>Org. learning Information systems capability Logistics capability</i>				0,11 F:46,4 ,240 *** Adj. R2: ,301 ,283 *** Sig: ,001
<i>Org. learning Info. systems cap. Logistics capability Log. Performance</i>				,119* F:78,5 0,041 Adj. R2: 0,063 ,504 ,573*** Sig: ,001

(***p<0,001; **p<0,01, *p<0,050)

5. CONCLUSION AND DISCUSSION

Logistics performance is one of the most important performance measures especially for manufacturing companies. Our study shows that managers, who want to have an excellence in logistics performance, should focus on creating an organization culture based on learning that is also supported by key capabilities. Logistics capability has a strategic aspect related to improvement of logistics effectiveness as well as firm performance overall. In addition, successful logistics activities cannot be thought without having a sustainable and healthy communication provided by information systems within the organization with third parties related to activities outside of the organization. Unlike many operational and organizational capabilities, logistics capability depends on outside factors as well as inside effects. Logistics excellence is a powerful competence and source of competitive advantage especially for manufacturing companies and considered as a strategic resource that enables new strategic moves in the market.

As an important part of the operation side in companies, information systems capability plays a crucial role. Information systems help creation of a system that enable this transfer in an accurate and effective way within an organization. Each activity is linked with another one in companies. In order to have a smooth operational cycle, there must be a strong infrastructure system, which is always supported by updated and innovative solutions. This capability affects all of the interactions occurring that are vital to the realization of activities. The importance of information systems capability increase as it also allows to the transfer of tacit knowledge, which is one of the main dimensions mentioned in organizational learning. Our research shows that a successful firm performance is dependent on a successful logistics performance. In order to achieve this, companies not only must be learning oriented, but also must provide strong information systems capability as well as logistics capability.

There are a few limitations of this study. This survey is conducted on companies that are operating in manufacturing sector in Turkey. Moreover, this survey is conducted on a limited number of sectors- only on production sectors- that is why findings might not be transferable to all types of sectors and organizations. Thus, further researches can be conducted on other sectors and, also in different countries for the generalizability of findings.

REFERENCES

- Acar, Z. A. and Zehir, C. (2009). Development and validation of a multidimensional business capabilities measurement instrument. *Journal of Transnational Management*, 14(3), 215-240.
- Agarwal, R., Krudys, G. and Tanniru, M. (1997). Infusing learning into the information systems organization. *European Journal of Information Systems*, 6(1), 25-40.
- Amit, R. and Schoemaker, P.J.H. (1993). Strategic Assets and Organizational Rents. *Strategic Management Journal*, 14, 33-46.
- Andreu, R. and Ciborra, C. (1996). Organisational learning and core capabilities development: the role of IT. *The Journal of Strategic Information Systems*, 5(2), 111-127.
- Antoncic, B. and Hisrich, R. D. (2001). Intrapreneurship: Construct refinement and cross-cultural validation. *Journal of business venturing*, 16(5), 495-527.
- Argyris, C. and Schon D. (1978). *Organizational Learning*. Addison- Wesley, London.
- Baker, W. E. and Sinkula, J. M. (1999). The synergistic effect of market orientation and learning orientation on organizational performance. *Journal of the academy of marketing science*, 27(4), 411-427.
- Bapuji, H. and Crossan, M. (2004). From questions to answers: reviewing organizational learning research. *Management learning*, 35(4), 397-417.
- Barney, J. B. (1991), 'Firm Resources and Sustained Competitive Advantage', *Journal of Management*, Vol 17; s 112.
- Barney, J. B. and Clark, D. N. (2007). *Resource-Based Theory: Creating and Sustaining Competitive Advantage*, Oxford: Oxford University Press.
- Bell, J. E., Bradley, R. V., Fugate, B. S. and Hazen, B. T. (2014). Logistics information system evaluation: Assessing external technology integration and supporting organizational learning. *Journal of Business Logistics*, 35(4), 338-358.
- Boxall, P. (1996). The strategic HRM debate and the resource-based view of the firm. *Human resource management journal*, 6(3), 59-75.
- Canessa-Terrazas, E. C., Morales-Flores, F. J. and Maldifassi-Pohlhammer, J. O. (2017). The impact of IT-enhanced organizational learning on performance: evidence from Chile. *Revista Facultad de Ingeniería Universidad de Antioquia*, (82), 60-67.
- Celuch, K. G., Kasouf, C. J. and Peruvemba, V. (2002). The effects of perceived market and learning orientation on assessed organizational capabilities. *Industrial marketing management*, 31(6), 545-554.
- Cho, J.J.K, Ozment, J. and Sink, H. (2008). Logistics capability, logistics outsourcing and firm performance in an e-commerce market. *International journal of physical distribution & logistics management*, 38(5), 336-359.
- Christopher, M. (2000). The Agile Supply Chain. *Industrial Marketing Management* 29 (1): 37–44.
- Collis, D. J. (1994). Research note: how valuable are organizational capabilities?. *Strategic management journal*, 15(S1), 143-152.
- Chow, G., Heaver, T. D. and Henriksson, L. E. (1994). Logistics performance: definition and measurement. *International journal of physical distribution & logistics management*, 24(1), 17-28.
- Esper, T. L., Fugate, B. S. and Davis-Sramek, B. (2007). Logistics learning capability: sustaining the competitive advantage gained through logistics leverage. *Journal of Business Logistics*, 28(2), 57-82.
- Fahey, L. and Prusak, L. (1998). The eleven deadliest sins of knowledge management. *California management review*, 40(3), 265-276.
- Field, A. (2009). *Discovering Statistics Using Spss (3rd Ed.)*. London: Sage.
- Fiol, C. and Lyles, M. (1985). Organizational Learning. *The Academy of Management Review*, 10(4), 803-813. Retrieved from <http://www.jstor.org/stable/258048>.
- Gligor, D. M. and Holcomb, M. C. (2014). Antecedents and consequences of integrating logistics capabilities across the supply chain. *Transportation Journal*, 53(2), 211-234.
- Grant, R.M. (1996). Prospering in dynamically-competitive environments: organizational capability as knowledge integration. *Organizational Science* 7, 375–87.
- Hair, J. F. J., Black, W. C., Babin, B. J. and Anderson, R. E. (2010). *Multivariate Data Analysis*. Seventh Edition Prentice Hall.
- Hatch, M. J. and Cunliffe, A. L. (2013). *Organization theory: modern, symbolic and postmodern perspectives*. Oxford university press.
- Helfat, C.E. and Peteraf, M.A. (2003). The Dynamic Resource-Based View: Capability Lifecycles. *Strategic Management Journal*, 24, 997– 1010.

- Kaleka, A. (2002). Resources and capabilities driving competitive advantage in export markets: guidelines for industrial exporters. *Industrial Marketing Management*, 31(3), 273-283.
- King, W. R. (2006). The critical role of information processing in creating an effective knowledge organization. *Journal of Database Management (JDM)*, 17(1), 1-15.
- Levitt, B. and March, J.G. (1988). Organizational learning. *Annual Review of Sociology*, 14, 319–340.
- Lynch, D. F., Keller, S. B. and Ozment, J. (2000). The effects of logistics capabilities and strategy on firm performance. *Journal of business logistics*, 21(2), 47.
- Mentzer, J. T., Flint, D. J. and Hult, G. T. M. (2001). Logistics service quality as a segment-customized process. *Journal of Marketing*, 65, 82–104.
- Mentzer, J. T., Min, S. and Michelle Bobbitt, L. (2004). Toward a unified theory of logistics. *International Journal of Physical Distribution & Logistics Management*, 34(8), 606-627.
- Morash, E. A., Droge, C. L. and Vickery, S. K. (1996). Strategic logistics capabilities for competitive advantage and firm success. *Journal of business Logistics*, 17(1), 1.
- Nelson, R. R. and Sidney G. W. (1982). *An Evolutionary Theory of Economic Change*. Belknap Press/Harvard University Press: Cambridge.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization science*, 5(1), 14-37.
- Porter, M. E. (1985). *Competitive Advantage-Creating And Sustaining Superior Performance*. The Free Press, New York.
- Santos-Vijande, M. L., López-Sánchez, J. Á. and Trespalacios, J. A. (2012). How organizational learning affects a firm's flexibility, competitive strategy, and performance. *Journal of Business Research*, 65(8), 1079-1089.
- Teece, D. and Pisano, G. (1994). The dynamic capabilities of firms: an introduction. *Industrial and corporate change*, 3(3), 537-556.
- Tippins, M. J. and Sohi, R. S. (2003). IT competency and firm performance: is organizational learning a missing link?. *Strategic management journal*, 24(8), 745-761.
- Ulrich, D. (1989). Gaining Strategic and Organizational Capability in a Turbulent Business Environment, *The Academy of Management Executive*, Vol. III (2), pp. 115-122.
- Winter, S.G. (2000). The Satisficing Principle in Capability Learning. *Strategic Management Journal*. 21(10-11): 981-996.
- Wright, P. M. and McMahan, G. C. (1992). Theoretical perspectives for strategic human resource management. *Journal of management*, 18(2), 295-320.
- Xu, L. and S. Wang. (2012). "Empirical Research on Construct of Chain Store Logistics Capability System." *I-Business* 4 (1): 10–17.
- Zahra, S. A., Neubaum, D. O. and El-Hagrassey, G. M. (2002). Competitive analysis and new venture performance: Understanding the impact of strategic uncertainty and venture origin. *Entrepreneurship Theory and Practice*, 27(1), 1-28.



INTERACTIONS BETWEEN BRAND CONCEPT MARKETING AND PURCHASE INTENTION VIA WORD-OF-MOUTH: A CASE STUDY OF LUXURY BRANDED GOODS

DOI: 10.17261/Pressacademia.2019.1128

JMML-V.6-ISS.3-2019(3)-p.146-161

Hsiang-Hsi Liu¹, Chia-Mei Lo²

¹ National Taipei University, Graduate Institute of International Business, New Taipei City, Taiwan.

hsiang@mail.ntpu.edu.tw, ORCID: 0000-0001-5363-7505

² National Taipei University, Graduate Institute of International Business, New Taipei City, Taiwan.

hikohisashi@hotmail.com, ORCID: 0000-0003-0268-0515

Date Received: July 7, 2019

Date Accepted: September 5, 2019

To cite this document

Liu, H. H., Lo, C. M., (2019). Interactions between brand concept marketing and purchase intention via word-of-mouth: a case study of luxury branded goods. *Journal of Management, Marketing and Logistics (JMML)*, V.6(3), p.146-161.

Permament link to this document: <http://doi.org/10.17261/Pressacademia.2019.1128>

Copyright: Published by PressAcademia and limited licenced re-use rights only.

ABSTRACT

Purpose- The main purpose of this study is to investigate the interactions and interrelationships between brand concept marketing and purchase intention through word-of-mouth (WOM) for luxury branded goods.

Methodology- The research process is as follows. First, the literature review is conducted in the headings of brand concept marketing, WOM and purchase intention. Then, the interview questionnaire, participant information and findings of the questionnaire were presented in the study. Finally, the empirical results and suggestions of customers, firms and marketers are discussed in the last part of the study.

Findings- The empirical results show that WOM is an important intermediary between brand concept marketing and purchase intention. The effectiveness of brand concept marketing can be used as an advertising medium. Specifically, it has been found that the factors of brand concept marketing have a positive impact on the elements of WOM and purchase intention.

Conclusion- The main conclusion indicate that firms/marketers need to more actively engage in doing and applying WOM to influence on customers' purchase intention.

Keywords: Brand concept marketing, word-of-mouth (WOM), purchase intention, luxury branded goods.

JEL Codes: M30, M31, M37, L81

1. INTRODUCTION

In the past, people think only a few people are affordable for luxury branded goods. People also think that luxury branded goods is a symbol of vanity. However, the consumer behavior has changed, more and more people would like to spend their income on luxury branded goods as the luxury products can represent their social status, so even middle-class people begin to consume luxury brand products. Recently, as the average income has increased and the type of consumption has changed, more and more people are willing to pay for luxury branded goods. This situation exists not only in Taiwan but also in the world, including the United States, Europe, Japan, the United Kingdom and China.

As more and more people use luxury brands, international luxury branded goods are introduced into every country, and sales are rising year by year. This means that luxury branded goods are no longer luxury goods, and luxury branded goods have become an indispensable product in our daily lives. This change has also led to a shift in buying attitudes. As people's values of luxury branded goods have changed, marketing methods also need to change with people's minds. At present, the Internet has become a popular way to promote its products, so many companies have set up Internet stores or official Internet sites for consumers. Due to the widespread use of the Internet, customers can exchange ideas or share their experiences on Internet forums, bulletin board systems (BBS) and Internet sites. The impact of the forum and BBS was very strong, and even the newspapers began to adopt BBS

comments. In order to maintain their brand image and implement their comments on the Internet, some companies even require marketers to monitor Internet sites. Today, people make purchase decisions that depend not only on advertising, but also on word-of-mouth (WOM). Especially for luxury branded goods, such expensive goods, people usually consider this decision many times before purchasing a product. Therefore, when making purchasing decisions, WOM becomes an important factor for customers.

This study will discuss the relationships between brand concept marketing and purchase intention via WOM. Basically, the first goal of the study was to clarify and more fully understand brand concept marketing. The second goal is to reach a consensus on the previous WOM literature. The third goal is to evaluate the impact of brand concept marketing on consumers purchase intention through WOM. Then, the ultimate goal of the research is to use empirical results to provide practical advice to marketing practitioners who want to use brand concept marketing and WOM as an advertising tool or even to implement their marketing strategy.

The remaining of the paper is organized as follows. Section 2 reviews the main literature. Section 3 develops the research framework and research hypothesis. Section 4 discusses the empirical results and analysis. Section 5 presents the concluding remarks.

2. LITERATURE REVIEW

In this section, in order to achieve our motivations and purpose of study, we try to investigate the interrelationships between brand concept marketing and purchase intention via word-of-mouth (WOM). To effectively propose our research hypothesis and construct our theoretical framework, the related literature will be discussed here.

2.1 Brand Concept Marketing

The brand concept marketing means the marketing strategy that adopts the six-brand concept, attitude, benefit, culture, value, personality and user, which were proposed by Kotler (1994). Communicating a brand image to a target segment has long been regarded as an important marketing activity (Bastos and Levy, 2012). A well-communicated image should help establish a brand's position, isolate the brand from competition (Pawar, 2015), and therefore enhance the brand's market performance (Ehrenberg, Uncles and Goodhardt, 2004). A brand image has both direct effect on sales and a moderating effect on the relationship between product life cycle strategies and sales, (Park, Jaworski and MacInnis, 1986; Sondoh Jr, Omar, Wahid, Ismail and Harun, 2007 and Chen, Huang, Wang and Chen, 2018).

A brand image is not simply a perceptual phenomenon affected by the firm's communication activities alone, it is also the understanding consumers derive from the total set of brand-related activities engaged in by the firm (Keller, Parameswaran and Jacob, 2011). Marketers and firms should combine brand and marketing activities tight together, therefore, the brand equity can be established. Through marketing, brand awareness, brand image and even brand loyalty can be built. Marketing via brand positioning and product, price, place and promote these 4P, marketers and firms can distinguish their products with their competitors (Saqif and Razi, 2018). Brand and marketing like the two sides to a coin, both of them are necessary, marketing process help to set-up a brand and brand decide the marketing way, therefore, the combination of brand and marketing are essential factor for a firm to do selling for present days.

Mandel, Petrova and Cialdini (2006) and Han, Nunes and Drèze (2010) found the impact of media depictions and the desire for luxury branded goods has positive relationship. The study of Müller, Flores, Agrebi and Chandon (2008) and Kim and Ko (2010) indicated that website visitors with highly involvement are more prone to purchase the brand and change their opinion concerning the brand. Most of studies (Amatulli and Guido, 2011; Hung, Huiling Chen, Peng, Hackley, Amy Tiwaskul and Chou, 2011; Liu, Burns and Hou, 2013; Allman, Fenik, Hewett and Morgan, 2016) reveal that the brand concept marketing has positive and significant relationship with purchase intention.

2.2 Word-of-Mouth

Arndt (1967) and Bansal and Voyer (2000) annotated that Word-of-mouth (WOM) is a product-related conversation. In this modern era, people often use the Internet, and WOM influences people more. As pointed out by Filieri (2015) and Liang, Choi and Joppe (2018), traditional WOM is a consumer who talks face-to-face with their friends. However, Internet WOM uses words to spread consumer opinions or experiences. WOM is a form of interpersonal communication between consumers on personal experiences or perceptions of companies or products (Laczniak, DeCarlo and Ramaswami, 2001; Rahayu, 2018). Consumers often search for product information when they are unsure, until they are satisfied with the decision (Chun, Choi and Song, 2005; Baker, Donthu and Kumar, 2016). Reza Jalilvand and Samiei, (2012) and Chu and Kim (2018) advanced that WOM marketing, which encompasses

a variety of subcategories, including buzz, blog, viral, grassroots, causing influencers and social media marketing, as well as ambassador programs, work with consumer-generated media and more, can be highly valued by product marketers. WOM communication is an important source of consumer information, it forms the basis of interpersonal influence and determines the relevance of information (Zhang, Hu, Guo and Liu, 2017).

WOM can simply be a leading indicator of product success (Godes and Ayzlin, 2004). Chevalier and Mayzlin (2006) found that WOM had a positive impact on sales. Smith, Coyle, Lightfoot and Scott (2007), Wolny and Mueller (2013), and Xiaobo (2014) show that e-WOM has an impact on e-commerce-based consumer purchase intentions, and most people are willing to share marketing information with others. In addition, this influence is provided by the basic needs of human beings, by providing advice to help, and sharing common fun when looking for valuable information. Sundaram, Mitra and Webster (1998) used critical incidental technique to derive four motivations for promoting word of mouth, including altruism, self-improvement, product involvement, and helping companies. However, the fourth motivation is actually altruistic behaviour, and the assumption is that the customer actively recommends the product. There is a possibility that customers recommend their relatives or friends because of the reward. For example, cosmetic store sometimes offers free sample after customer recommending their friends (Cheung and Thadani, 2012 and Tien, Rivas and Liao, 2018).

2.3. Purchase Intention

Purchase intention is the intent of a consumer to purchase a particular product or service. Fishbein and Azjen (1975) cite purchase intentions as the most accurate predictor of actual purchase behaviour. The purchase intention may also be a personal behavioral tendency associated with the brand (Bagozzi and Burnkrant, 1979). A concise definition of purchase intention can be described as a purchase intention intended to be a conscious plan for an individual to attempt to purchase a brand (Spears and Singh, 2004; Hung, Huling Chen, Peng, Hackley, Amy Tiwaskul and Chou, 2011). Purchase intentions are customer behaviour variables traditionally used to assess the external impact of perceived quality (Anderson and Sullivan, 1993; Matsuoka, Hallak, Murayama, and Akiike, 2017). Purchase intention can be approximated using ratings of customer satisfaction and loyalty (DiPietro and Peterson, 2017). Customer satisfaction is defined as the emotional reaction accompanied with a disconfirmation experience which acts on the base attitude level and is consumption-specificity (Oliver, 1981). According to the researches of Bolton (1998) Pérez and Rodriguez del Bosque, (2015), a customer's purchase intention is caused partly by the customer's satisfaction with prior experiences on the product or service. As a customer gains experience in dealing with the product or service, he/she will place less importance on new information.

Firms' and marketers' benefits from customer loyalty, and Tellis (1988) tested it based on experience and found that loyal customers are more likely to respond more positively to advertising, both in terms of advertising perception and follow-up behaviour. Loyal customers are better able to remember the information in the ad and are less exposed due to selective attention and perception. Customer loyalty allows companies to charge higher premiums for their products and services, ultimately affecting the firm's bottom line (Bolton, 1998; Bourne, 2016). Anderson (1998) and Baker, Donthu and Kumar (2016) further indicated that WOM is increasing in customer loyalty. Those customers who describe themselves as loyal are significantly more likely to engage in WOM.

3. RESEARCH FRAMEWORK AND HYPOTHESES

The model we studied in this research is that brand concept marketing will have a positive impact on WOM, which in turn will have a positive impact on the purchase intentions. In addition, brand concept marketing will have a positive impact on purchase intentions. Therefore, the general hypotheses can be described as:

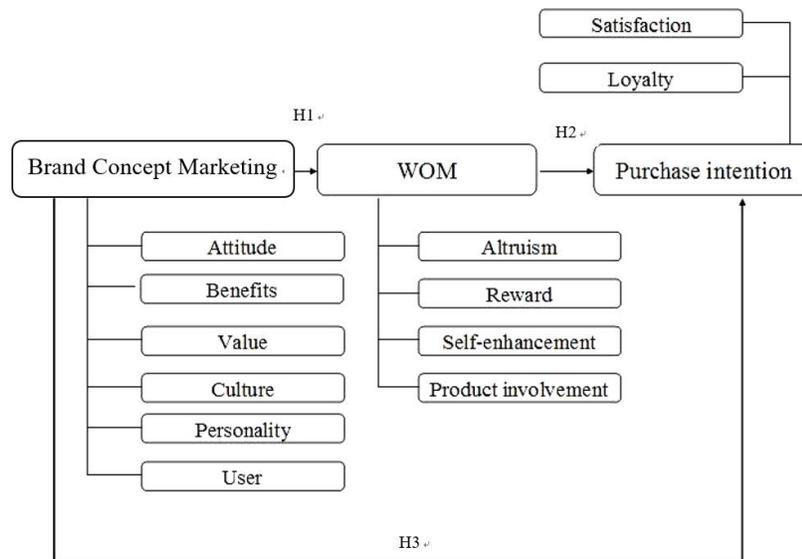
H1: Brand concept marketing will have a positive impact on WOM.

H2: WOM will have a positive impact on purchase intention.

H3: Brand concept marketing will have a positive impact on purchase intention.

The interactions between these factors will also be examined. In addition, because a causal effect has been previously found between the elements of WOM, this causal effect will also be considered in the study. These hypotheses will be stated after the factor analysis. The basic model is demonstrated here in Figure 1.

Figure 1: Influential Path and Research Hypotheses



4. METHODOLOGY

4.1. Measures and Questionnaires

According to the research framework (Figure 1), Interactions between brand concept marketing and purchase intention via WOM need to be measured to help test the hypothesis. A self-administrated questionnaire survey was conducted to collect empirical data. The questions in the questionnaire are designed based on a review of the literature in above section. The questionnaire was constructed based on the interaction and interrelationship among the three dimensions in this research and research framework. As previous reviewed on brand concept marketing, this study applied the six factors of brand concept marketing and referred to existing literatures. WOM, as mentioned earlier, has been widely researched in marketing area. Similar to WOM, purchase intention, questions were referred to the service literature. Data on respondents' perceptions of satisfaction and importance were gathered.

The questionnaire was pre-tested and revised to ensure content validity. The questionnaire consists of three parts. The first part is brand concept marketing which is consisted by six dimensions such as attitude, benefit, culture, value, personality and user. The second part is WOM; altruism, reward, self-enhancement and product-involvement. The purchase intention part is measured by two dimensions, which are satisfaction with brand concept marketing and WOM and customer loyalty to marketing and WOM. All items in these three parts are measured by a 5-point Likert-type scale from 'strongly disagree' to 'strongly agree'.

4.2. Sampling and Survey

The research sample consisted of individuals from all over Taiwan who purchased luxury branded goods. The questionnaire was posted on a website that provides market research services. The site allows interested individuals to participate in the survey. Based on Comrey and Lee (1973), while investigating factor analysis, the sample size should exceed 300; when referring to unknown population, according to the formula, in order to obtain a 95% confidence interval and the sampling error is less than 5%, the sample of this study should be greater than 384. A total of 597 responses were collected. 185 useless replies were deleted, so the response rate was approximately 70%.

4.3. Econometric Method

In order to achieve our research objective, this study uses econometric method to construct statistical analyses. Basic statistics will be conducted in order to ascertain differences within the respondent population. Reliability, validity and factor analysis were conducted by using SPSS to extract the main factors of interactions between brand concept marketing and purchase intention via WOM. Then, factor analysis is used to calculate the principal component and varimax rotation to select the factor. The structural

equation model (SEM) was analyzed using the LISREL computer package and the path coefficients were estimated by maximum likelihood estimation (MLE).

5. EMPIRICAL RESULTS AND ANALYSIS

5.1. Analysis of Sampling Characteristics

The basic statistics for demographic information are shown in Table 1. The basic characteristics of sampling are discussed individually as follows.

Table 1: Basic Statistics

Variable	Category	Frequency	Percentage
Age	Under 20	28	6.8
	21-25	245	59.5
	26-30	103	25
	31-35	23	5.6
	36-40	8	1.9
	Above 40	5	1.2
Sex	Male	155	37.6
	Female	257	62.4
Education	High school	54	13.1
	Bachelor	212	51.5
	Master	141	34.2
	PhD	5	1.2
Average monthly income	20000 and under	122	29.6
	20001-30000	66	16.0
	30001-40000	102	24.8
	40001-50000	98	23.8
	50001-60000	16	3.9
	60001 and above	8	1.9
Main resource of luxury branded goods	Internet	143	34.7
	Newspaper or Magazine	90	21.8
	Other recommendations	128	31.3
	Special store	24	5.8
	Other	27	6.6
The number of luxury branded goods you own	1-2	135	32.8
	3-5	193	46.8
	6-10	67	16.3
	Above 10	17	4.1

Age: Most of the respondents were quite young and aged between 21 and 25, accounting for 58.8%. Other but still substantial groups can be found among respondents between the ages of twenty-six to thirty. These two groups are the main people with the strongest purchasing power.

Sex: As expected, the majority of respondents were women, accounting for approximately 65%. People often link luxury branded goods to women, as can be seen from this result

Education: Most of the respondents were educated in the above bachelor's degree, and about 50% of the respondents had a bachelor's degree. The second most respondents are masters. This may mean that respondents can provide a more accurate answer to this study.

Average monthly income: There are three majorities in this section. According to the education level provided above, the majority of respondents are students, so the first major monthly income group is "20,000 and below". The second and third majority are "30,001-40,000" and "40,000-50,000" respectively, indicating that a fairly young career is a major customer of luxury branded goods.

Main resource of luxury branded goods: Based on the sampling, the two major luxury resources are the Internet and other recommendations. These two resources are 34.7% and 31.3%, respectively.

The number of luxury branded goods you own: Statistics show that 46.8% of people have three to five luxury branded items. It can be seen that a significant proportion (about 32.8%) of respondents have one or two luxury branded items.

5.2. Reliability

To test the reliability of reflective variables (constructs), according to Cronbach and Warrington (1951), when Cronbach's $\alpha \geq 0.7$, the reliability of the reflective variables was very good. In this study, the results of the reliability analysis (Table 2) showed that Cronbach's α for the constructs about the reflective latent variables such as brand concept marketing 0.7478, word-of-mouth 0.7762 and purchase intention 0.8081. Even total agreement scale has Cronbach's α 0.9364, while total importance scale has Cronbach's α 0.9258. The estimated Cronbach's α is much higher than the threshold level of 0.7 recommended by Nunnally (1978), each reflective construct is correctly measured, thus verifying their internal consistency. The reliability of the construct is high and strong.

5.3. Validity

Zaltmann and Burger (1975) propose the use of communalities (between observed variables and their latent construct) to measure validity. It has been proposed that a commonality of at least 0.4 indicates reasonable validity. In addition, eigenvalues in excess of 1 is also indicative of validity. The cumulative variance explained by the eigenvalues also needs to be larger than 40%. As this is the case in all of the scales, it can be inferred that the scale possesses reasonable validity. As can be seen from Table2, the constructs are both convergent and discriminate valid because the average variance extracted (AVE)/commonness of all extractions exceeds 0.5. We thus confirm the convergent and discriminant validity of the constructs.

Table 2: Cronbach's α and AVE /Communalities*

	Importance	Satisfaction		Importance	Satisfaction
Brand Concept Marketing (Cronbach's $\alpha = 0.7478$)					
AVE /Communality					
A1:	0.701	0.712	D11:	0.777	0.819
A2:	0.774	0.748	D12:	0.791	0.740
A3:	0.745	0.726	D13:	0.755	0.742
B4:	0.722	0.749	E14:	0.665	0.691
B5:	0.757	0.765	E15:	0.728	0.748
B6:	0.729	0.701	E16:	0.715	0.777
B7:	0.684	0.757	F17:	0.799	0.750
C8:	0.744	0.748	F18:	0.698	0.712
C9:	0.672	0.717	F19:	0.719	0.748
C10:	0.683	0.741	F20:	0.746	0.815
Word-of-Mouth (WOM) (Cronbach's $\alpha = 0.7762$)					
AVE /Communality					
G21	0.771	0.81	I28	0.693	0.758
G22	0.775	0.782	I29	0.772	0.755
G23	0.709	0.751	I30	0.768	0.803
H24	0.757	0.757	J31	0.794	0.796
H25	0.803	0.717	J32	0.810	0.813
H26	0.669	0.670	J33	0.833	0.789
H27	0.749	0.718	J34	0.679	0.679

Purchase Intention (Cronbach's $\alpha = 0.8081$)					
AVE /Communality					
K35	0.751	0.818	L40	0.759	0.792
K36	0.818	0.814	L41	0.76	0.794
K37	0.786	0.842	L42	0.744	0.733
K38	0.769	0.767	L43	0.777	0.768
K39	0.761	0.797			

* Please refer to Appendix 1 for a list of abbreviations used in this table.

5.4. Factor Analysis

The KMO (Kaiser-Meyer-Olkin Sampling Adequacy Metric) score for all dimensions was above 0.8 (Table 3), meeting the minimum requirement of 0.6. This indicates that a successful factor analysis can be performed, and it also shows that the null hypothesis of the correlation matrix can be rejected as the identity matrix in Bartlett's sphericity test. An eigenvalue greater than one is used to determine the number of components present in the data. The extracted factor is then renamed using the characteristics of the item with a factor load greater than 0.7.

Table 3: Kaiser-Meyer Olkin and Bartlett's Test of Sphericity Results

Dimension	Kaiser-Meyer Olkin	Bartlett's Test of Sphericity
Total	0.889	Chi-Square: 5001.112 Significance: 0.000
Brand concept marketing	0.879	Chi-Square: 5392.368 Significance: 0.000
Word-of-Mouth	0.875	Chi-Square: 4678.345 Significance: 0.000
Purchase intention	0.826	Chi-Square: 2567.654 Significance: 0.000

5.4.1. Brand Concept Marketing

Initially, brand concept marketing has six factors, such as attitude, interest, value, culture, personality and user. However, the results of the factor analysis found three factors with eigenvalues greater than one. These three factors are renamed based on features with a factor load greater than 0.7, namely "status", "additional benefit" and "image and style". The first factor, the status, including the questionnaire item "social position," "attract people's attention," "wealthy symbolic" and "reveal different identity". The second factor, the additional benefit, represents the added value, especially for emotionally functional customers, for example, with the feelings and preferences of luxury branded goods. The final factor, image and style, which represents the brand image is affected by the country of origin and the style should represent the personality.

5.4.2. Word-of-Mouth

Using varimax rotation in factor analysis, two clear factors were found in word of mouth. These factors can be renamed "experience sharing" and "appreciation and recognition". The former refers to whether customers are willing to share their impressions after using luxury branded goods. The latter refers to the motivation of customers to share comments about luxury branded goods.

5.4.3. Purchase Intention

The result of factor analysis reveals there are two factors for purchase intention. One factor remains the items of satisfaction, thus, keeping the original name. The other factor is made up of the items both from satisfaction and loyalty, and most of the items are related to the customer preference, for example, I will buy related products for the brand. Therefore, this factor has been renamed to the customers' purchase preference.

5.5. Estimated Results of the Restated Hypotheses

The hypotheses are restated to include the various factors found in the factor analyses.

H1_a: Status has a positive impact on experience sharing

H1_b: Status has a positive impact on appreciation and recognition

H1_c: Additional benefit has a positive impact on experience sharing

H1_d: Additional benefit has a positive impact on appreciation and recognition

H1_e: Image and style has a positive impact on experience sharing

H1_f: Image and style has a positive impact on appreciation and recognition

H2_a: Experience sharing has a positive impact on satisfaction

H2_b: Experience sharing has a positive impact on preference

H2_c: Appreciation and recognition has a positive impact on satisfaction

H2_d: Appreciation and recognition has a positive impact on preference

H3_a: Status has a positive impact on satisfaction

H3_b: Status has a positive impact on preference

H3_c: Additional benefit has a positive impact on satisfaction

H3_d: Additional benefit has a positive impact on preference

H3_e: Image and style has a positive impact on satisfaction

H3_f: Image and style has a positive impact on preference

The following structural equations were set up in order to conduct the hypothesis testing.

$$\eta = \beta\eta + \Gamma\xi + \zeta$$

$$\begin{bmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \\ \eta_4 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ \beta_{41} & \beta_{42} & 0 & 0 \end{bmatrix} \begin{bmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \\ \eta_4 \end{bmatrix} + \begin{bmatrix} \gamma_{11} & \gamma_{12} & \gamma_{13} \\ \gamma_{21} & \gamma_{22} & \gamma_{23} \\ \gamma_{31} & \gamma_{32} & \gamma_{33} \\ \gamma_{41} & \gamma_{42} & \gamma_{43} \end{bmatrix} \begin{bmatrix} \xi_1 \\ \xi_2 \\ \xi_3 \end{bmatrix} + \begin{bmatrix} \zeta_1 \\ \zeta_2 \\ \zeta_3 \\ \zeta_4 \end{bmatrix}$$

$$\eta_1 = \gamma_{11}\xi_1 + \gamma_{12}\xi_2 + \gamma_{13}\xi_3 + \zeta_1$$

$$\eta_2 = \gamma_{21}\xi_1 + \gamma_{22}\xi_2 + \gamma_{23}\xi_3 + \zeta_2$$

$$\eta_3 = \gamma_{31}\xi_1 + \gamma_{32}\xi_2 + \gamma_{33}\xi_3 + \zeta_3$$

$$\eta_4 = \beta_{41}\eta_1 + \beta_{42}\eta_2 + \gamma_{41}\xi_1 + \gamma_{42}\xi_2 + \gamma_{43}\xi_3 + \zeta_4$$

5.5.1. Empirical Results of the Structural Equation Model (SEM)

The above hypotheses were tested using a confirmatory factor analysis and a maximum likelihood method. As a result, the estimated final model was obtained after several modifications. This final model was obtained after a procedure of modifications made to the original model. Modifications were made for those cases in which MI (modification index) was greater than five. The modifications resulted in an improvement in goodness-of-fit. The goodness-of-fit of final model is demonstrated in Table 4.

Table 4.A: Comparison of Goodness-of-Fit of the Final Structural Equation Models

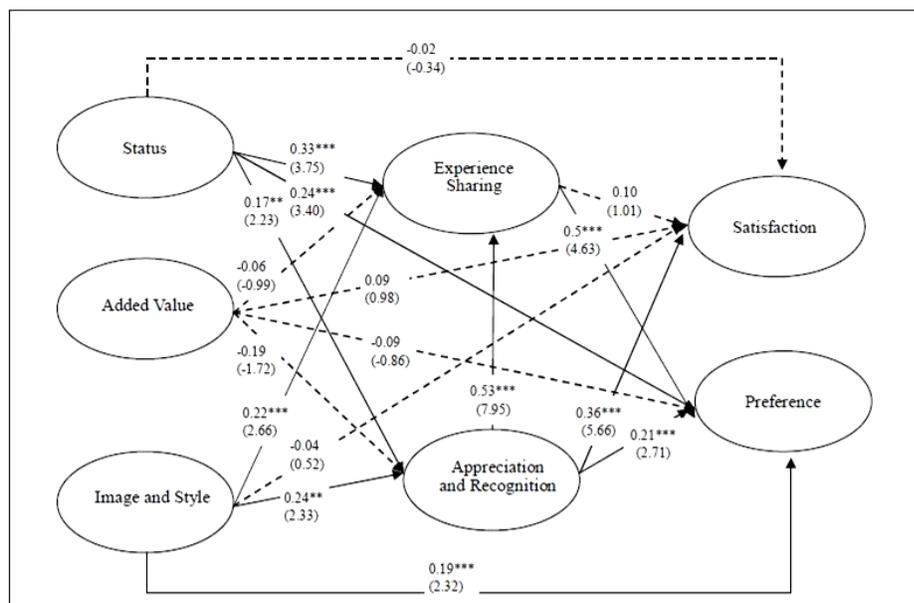
Type of Measure	Measure	Recommended Limits	Final Model	Acceptable
Absolute	χ^2/df	<3	251.26/131=1.92	Yes
	GFI	>0.90	0.93	Yes
	RMR	<0.06	0.032	Yes
	RMSEA	<0.05	0.05	Yes
Relative	AGFI	>0.90	0.90	Yes
	NNFI	>0.90	0.97	Yes
	CFI	>0.90	0.98	Yes
Adjusted	PNFI	>0.50	0.66	Yes
	PGFI	>0.50	0.58	Yes

As can be seen in Table 4, the diagnostic checking for goodness-of-fit of the estimated final model reaches an acceptable area. Therefore, the estimated final model can be used to analyse the hypothesised relationships, as well as the direct and indirect effects of the modelling constructs. The estimated results of the final model are reported in Figure 2. The solid lines represent significant effects at 1% or 5% significant level and while the dotted lines show insignificant results. The results of all hypothesis tests are discussed below:

H1a-H1f: The effect of brand concept marketing on WOM

As indicated in Figure 2, the estimated results show that there are significant and positive at the 5% significant level for the reactions of status-experience sharing, status-appreciation and recognition, image and style-experience sharing as well as image and style-appreciation and recognition on WOM contents and behaviours. Therefore, hypotheses, **H1_a** for the relationships between the status meaning of luxury branded goods and experience sharing, **H1_b** for the relationships between the status meaning of luxury branded goods as well as appreciation and recognition, **H1_c** for the relationships between the image and style of luxury branded goods and experience sharing and **H1_f** for the relationships between the image and style of luxury branded goods and appreciation and recognition, are supported.

Figure 2: The Final Model Path Coefficients and t-values



These results imply that the status represented by luxury branded goods can encourage customers to share their using experience and urge customers to make WOM in order to gain others appreciation and recognition. Additionally, the image and style of luxury goods positively affect the experience sharing of customers and the appreciation and recognition from sharing the WOM. Our findings are supported by the research results of Müller, Flores, Agrebi and Chandon (2008), Kim and Ko (2010), Amatulli and Guido (2011), Hung, Huiling Chen, Peng, Hackley, Amy Tiwaskul and Chou (2011), Liu, Burns and Hou (2013) and Allman, Fenik, Hewett and Morgan (2016). However, the tests of hypotheses, **H1_c** for the relationships between the additional benefit of luxury branded goods and experience sharing and **H1_d** for the relationships between the additional benefit of luxury branded goods and appreciation and recognition, are not accepted. In this study, these two hypotheses that are not supported by the statistical results may indicate that the additional benefit of luxury goods cannot motivate customers to share their experience in using products or the motivation for customers to share WOM is not the additional benefit of luxury branded goods.

The above findings indicate that symbolic meanings such as status and social status represented by luxury branded goods can motivate customers to share their experiences. The image and style of luxury branded goods can also encourage customers to share their experiences after using branded goods. In addition, in order to increase the discussion of luxury branded goods, marketers need to emphasize symbolism and appearance, such as the image and style of luxury branded goods.

H2_a -H2_d: The effect of WOM on consumer purchase intention

Except the **H2_a** for the relationships between the experience sharing and customers' satisfaction is not supported by the empirical results, it may reveal that experience sharing is not a way to improve customer satisfaction with consumers' purchase intention. The other three hypotheses, **H2_b** for the relationships between the experience sharing and customers' purchase preference, **H2_c** for the relationships between the appreciation and recognition and customers' satisfaction, **H2_d** for the relationships between appreciation and recognition and customers' purchase preference, have been tested to obtain positive results at the 5% significance level. These hypotheses are supported by statistical results. Consumers' purchase intention through their purchase preferences are affected by the experience shared by other users. The appreciation and recognition from sharing WOM can positively and directly influence customers' satisfaction. In addition, the purchase preferences of customers are influenced by the appreciation and recognition of WOM. In General, our findings are supported by the research results of Godes and Ayzlin (2004), Chevalier and Mayzlin (2006), Smith, Coyle, Lightfoot and Scott (2007), Wolny and Mueller (2013) and Xiaobo (2014).

Basically, these above results point out that the purchase intention through purchase preference of customer is affected by the experience shared by customers and the appreciation and recognition resulted from sharing WOM. However, the purchase intention through the satisfaction of customers only affected by the appreciation and recognition from the spreading of WOM.

H3_a-H3_f: The effect of brand concept marketing on consumer purchase intention

There are only two hypotheses, **H3_b** for the relationship between the status meaning of luxury branded goods and customers' purchase preference, **H3_f** for the relationship between the image and style of luxury branded goods and customers' purchase preference, are supported by the empirical results to have positive significantly effects at the 5% level. These results indicate that the status meaning and brand image and style of luxury branded goods are major factors which can influence customers' preference. However, the other four hypotheses, **H3_a** for the relationship between the status meaning of luxury branded goods and customers' satisfaction, **H3_c** for the relationship between the additional benefit of luxury branded goods and customers' satisfaction, **H3_d** for the relationship between the additional benefit of luxury branded goods and customers' purchase preference and **H3_e** for the relationship between the image and style of luxury branded goods and customers' satisfaction, are not supported by the empirical results. The reasons may be that customers' satisfaction does not come from the status meaning of luxury goods. The increase for the additional benefit of luxury goods cannot rise the customers' satisfaction and customers' purchase preference. The image and style of luxury goods does not have a strong direct impact on s customers' satisfaction.

Based on above results, the status meaning and the image and style of luxury branded goods significantly affect customers' purchase intention. The increase for the additional benefit of luxury goods cannot rise the customers' satisfaction and customers' purchase preference. These results may mean that brand concept marketing is not a major source of customer satisfaction. When reviewing the items related to the satisfaction, most respondents expressed satisfaction with the quality and service of luxury branded goods, which indicates that marketers want to improve customer satisfaction and should pay more attention to the increased service of luxury branded goods. The brand concept marketing in this study partly influence the purchase intention through purchase preference. Marketers have to emphasize the status meaning and the image and style of luxury branded goods in order to attract customers' purchase preference. In this part, our findings are supported by the research results of Bolton (1998), Amatulli and Guido (2011) and Pérez and Rodriguez del Bosque (2015).

Based on the above discussions, all test results for these hypotheses are summarized in Table 5.

Table 5: Summary of Hypothesis Tests

Hypothesis	Description	Conclusion
H1 _a	Status has a positive impact on experience sharing	Accept
H1 _b	Status has a positive impact on appreciation and recognition	Accept
H1 _c	Additional benefit has a positive impact on experience sharing	Reject
H1 _d	Additional benefit has a positive impact on appreciation and recognition	Reject
H1 _e	Image and style have a positive impact on experience sharing	Accept
H1 _f	Image and style have a positive impact on appreciation and recognition	Accept
H2 _a	Experience sharing has a positive impact on satisfaction	Reject
H2 _b	Experience sharing has a positive impact on preference	Accept
H2 _c	Appreciation and recognition have a positive impact on satisfaction	Accept
H2 _d	Appreciation and recognition have a positive impact on preference	Accept
H3 _a	Status has a positive impact on satisfaction	Reject
H3 _b	Status has a positive impact on preference	Accept
H3 _c	Additional benefit has a positive impact on satisfaction	Reject
H3 _d	Additional benefit has a positive impact on preference	Reject
H3 _e	Image and style have a positive impact on satisfaction	Reject
H3 _f	Image and style have a positive impact on preference	Accept

5.5.2. Direct, Indirect and Total Effects of the Path Analysis

The aim of the path analysis is to establish the relative strength of the different routes to customers' purchase intention. Table 6 details the direct, indirect and total effects of the paths within the model framework. The significance of discovering the status meaning of luxury branded goods is that the indirect impact is greater than the direct influence on customers' purchase intention. This result means that experience sharing as well as appreciation and recognition are two important mediators that measure customers' purchase preferences. Therefore, in order to achieve greater effect for brand concept marketing on customers' purchase intention through purchase preferences, the experience sharing as well as appreciation and recognition from WOM are needed to be considered as a link. The symbolic meaning of luxury branded goods is often the reason why customers buy luxury brand goods. As mentioned earlier, in the past, it was believed that only nobles and wealthy people could own luxury branded goods, which led people to link luxury brand goods with wealth.

The indirect effect between the image and style of luxury branded goods and the purchase preferences is greater than the direct effect. When making a purchase decision, the appearance of the goods is the customer's first choice. This result suggests that when examining the impact from the image and style of luxury branded goods to customers' purchase preference, firms/marketers need to consider two intermediaries, namely appreciation and recognition and experience sharing. Therefore, the effect can be greater.

Table 6 Direct, Indirect and Total Effects

Path	Direct Effect	Total Indirect Effect	Bigger Effect
BCM1→WOM1	0.33 (3.75)	---	---
BCM1→WOM2	0.17 (2.23)	---	---
BCM1→PI1	-0.02 (-0.34)	0.10 ^a	---
BCM1→PI2	0.24 (3.4)	0.25 ^b	Indirect
BCM2→WOM1	-0.06 (-0.09)	---	---
BCM2→WOM2	-0.19 (-1.72)	---	---
BCM2→PI1	0.09 (0.98)	-0.08 ^c	---
BCM2→PI2	-0.09 (-0.86)	-0.12 ^d	---
BCM3→WOM1	0.22 (2.66)	---	---
BCM3→WOM2	0.24 (2.33)	---	---
BCM3→PI1	-0.04 (-0.52)	0.12 ^e	---
BCM3→PI2	0.19 (2.32)	0.22 ^f	Indirect
WOM1→PI1	0.1 (1.01)	---	---
WOM1→PI2	0.5 (4.63)	---	---
WOM2→PI1	0.36 (5.66)	0.05 ^g	Direct
WOM2→PI2	0.21 (2.71)	0.11 ^h	Direct
WOM2→WOM1	0.53 (7.95)	---	---

Note: BCM1=The status meaning of luxury branded goods;

BCM2=The additional benefit of luxury branded goods;

BCM3= The image and style of luxury branded goods;

WOM1=Experience sharing; WOM2=Appreciation and recognition;

PI1=Customers' satisfaction; PI2=Customers' purchase preference

() t-value

Indirect effect:

a: BCM1→WOM1→PI1+BCM1→WOM2→PI1+BCM1→WOM2→WOM1→PI1

b: BCM1→WOM1→PI2+BCM1→WOM2→PI2+BCM1→WOM2→WOM1→PI2

c: BCM2→WOM1→PI1+BCM2→WOM2→PI1+BCM2→WOM2→WOM1→PI1

d: BCM2→WOM1→PI2+BCM2→WOM2→PI2+BCM2→WOM2→WOM1→PI2

e: BCM3→WOM1→PI1+BCM3→WOM2→PI1+BCM3→WOM2→WOM1→PI1

f: BCM3→WOM1→PI2+BCM3→WOM2→PI2+BCM3→WOM2→WOM1→PI2

g: WOM2→PI1+WOM2→WOM1→PI1

h: WOM2→PI2+WOM2→WOM1→PI2

5. CONCLUDING REMARKS

This study adopts structural equation model (SEM) to examine the relationships between brand concept marketing and purchase intention via WOM. It was found that, in general, the status meaning of luxury branded goods has a positive effect on experience sharing, appreciation and recognition and customers' purchase intention through purchase preference; the image and style of luxury branded goods has a positive impact on experience sharing, appreciation and recognition and customers' purchase intention through purchase preference; experience sharing has a positive effect on customers' purchase intention through purchase preference; appreciation and recognition has also a positive influence on customers' satisfaction, preference and experience sharing.

According to the results discovered by SEM, the intermediary effect of WOM can be defined which means WOM served as an important intermediary between brand concept marketing and customers' purchase intention. The direct effects through brand concept marketing on customers' purchase intention are less than the indirect effect from brand concept marketing on purchase intention with WOM as an intermediary. The empirical result reveals that the brand concept marketing is not the main factor for improving customers' purchase intention and the brand concept marketing will generate WOM and further influence on purchase intention.

In addition, the empirical results indicate that the indirect effect for the path from the status meaning of luxury branded goods to customers' purchase intention through purchase preference is higher than the direct effect, which is the same as the indirect impact of the image and style of luxury branded goods on customers' purchase intention through purchase preference. This result

implies that when measuring the effect of brand concept marketing on customers' purchase intention through purchase preference, experience sharing as well as appreciation and recognition, representing WOM are two important intermediaries. Therefore, experience sharing as well as appreciation and recognition from WOM need to be considered in order to access a greater impact on customers' purchase intention. Based on this result, marketers should pay attention to the WOM of luxury branded goods in order to increase the purchase intention of customers. In other words, through WOM, brand concept marketing can better satisfy customers' purchase intention and the effect on purchase intention will be greater.

To sum up, the results of the present research show that the effectiveness of brand concept marketing could be used as an advertising medium. Specifically, it has been found that the factors of brand concept marketing have the potential to have a positive impact on the elements of WOM and customers' purchase intention. The results also indicate that firms/marketers need to more actively engage in doing and applying WOM to influence on customers' purchase intention.

REFERENCES

- Allman, H. F., Fenik, A. P., Hewett, K. and Morgan, F. N. (2016). Brand image evaluations: The interactive roles of country of manufacture, brand concept, and vertical line extension type. *Journal of International Marketing*, 24(2), 40-61.
- Amatulli, C. and Guido, G. (2011). Determinants of purchasing intention for fashion luxury goods in the Italian market: A laddering approach. *Journal of Fashion Marketing and Management: An International Journal*, 15(1), 123-136.
- Anderson, E. W. (1998). Customer satisfaction and word of mouth. *Journal of Service*, 1(1), 5–17.
- Anderson, E. W. and Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science*, 12(2), 125-143.
- Arndt, J. (1967), *Word of Mouth Advertising: A Review of the Literature*, New York: Advertising Research Foundation.
- Bagozzi, R. P. and Burnkrant, R. E. (1979). Attitude organization and the attitude-behavior relationship. *Journal of personality and social psychology*, 37(6), 913.
- Baker, A. M., Donthu, N. and Kumar, V. (2016). Investigating how word-of-mouth conversations about brands influence purchase and retransmission intentions. *Journal of Marketing Research*, 53(2), 225-239.
- Bansal, H. S. and Voyer, P. A. (2000). Word-of-mouth processes within a services purchase decision context. *Journal of Service Research*, 3(2), 166-177.
- Bastos, W. and Levy, S. J. (2012). A history of the concept of branding: practice and theory. *Journal of Historical Research in Marketing*, 4(3), 347-368.
- Bolton, R. N. (1998). A dynamic model of the duration of the customer's relationship with a continuous service provider: The role of satisfaction. *Marketing Science*, 17(1), 45-65.
- Bourne, P. A. (2016). Customer satisfaction of policing the Jamaican society: using SERVQUAL to evaluate customer satisfaction. *Journal of Healthcare Communications*, 1(3), 2472-1654.
- Chen, Y. S., Huang, A. F., Wang, T. Y. and Chen, Y. R. (2018). Greenwash and green purchase behaviour: the mediation of green brand image and green brand loyalty. *Total Quality Management and Business Excellence*, 29(1), 1-16.
- Cheung, C. M. and Thadani, D. R. (2012). The impact of electronic word-of-mouth communication: A literature analysis and integrative model. *Decision support systems*, 54(1), 461-470.
- Chevalier, J. A. and Mayzlin, D. (2006). The effect of word of mouth on sales: Online book reviews. *Journal of Marketing Research*, 43(3), pp.345-354.
- Chu, S. C. and Kim, J. (2018). The current state of knowledge on electronic word-of-mouth in advertising research. *International Journal of Advertising*, 37(1), 1-13.
- Chun, W., Choi, B. and Song, M. R. (2005). The role of on-line retailer brand and infomediary reputation in increasing consumer purchase intention. *International Journal of Electronic Commerce*, 9(3), pp.115-127.
- Comrey, A.L. and Lee, H. B. (1973), *A First Course in Factor Analysis*, New York, NY: Psychology Press.
- Cronbach, L. J. and Warrington, W. G. (1951). Time-limit tests: estimating their reliability and degree of speeding. *Psychometrika*, 16(2), 167-188.
- DiPietro, R. B. and Peterson, R. (2017). Exploring cruise experiences, satisfaction, and loyalty: the case of Aruba as a small-island tourism

- economy. *International Journal of Hospitality and Tourism Administration*, 18(1), 41-60.
- Ehrenberg, A. S., Uncles, M. D. and Goodhardt, G. J. (2004). Understanding brand performance measures: using Dirichlet benchmarks. *Journal of Business Research*, 57(12), 1307-1325.
- Filieri, R. (2015). What makes online reviews helpful? A diagnosticity-adoption framework to explain informational and normative influences in e-WOM. *Journal of Business Research*, 68(6), 1261-1270.
- Fishbein, M., and Ajzen, I. (1975). *Belief, attitude, intention, and behaviour*. Reading, MA Addison-Wesley.
- Godes, D. and Mayzlin, D. (2004). Using online conversations to study word-of-mouth communication. *Marketing Science*, 23(4), 545-560.
- Han, Y. J., Nunes, J. C. and Drèze, X. (2010). Signaling status with luxury goods: The role of brand prominence. *Journal of Marketing*, 74(4), 15-30.
- Hung, K. P., Huiling Chen, A., Peng, N., Hackley, C., Amy Tiwaskul, R. and Chou, C. L. (2011). Antecedents of luxury brand purchase intention. *Journal of Product and Brand Management*, 20(6), 457-467.
- Keller, K. L., Parameswaran, M. G. and Jacob, I. (2011). *Strategic brand management: Building, measuring, and managing brand equity*. Pearson Education India.
- Kim, A. J. and Ko, E. (2010). Impacts of luxury fashion brand's social media marketing on customer relationship and purchase intention. *Journal of Global Fashion Marketing*, 1(3), 164-171.
- Kotler, P. (1994), *Marketing management: Analysis, planning, implementation and control*, Prentice-Hall, New Jersey.
- Laczniak, R. N., DeCarlo, T. E. and Ramaswami, S. N. (2001). Consumers' responses to negative word-of-mouth communication: An attribution theory perspective. *Journal of Consumer Psychology*, 11(1), 57-73
- Liang, L. J., Choi, H. C. and Joppe, M. (2018). Understanding repurchase intention of Airbnb consumers: perceived authenticity, electronic word-of-mouth, and price sensitivity. *Journal of Travel and Tourism Marketing*, 35(1), 73-89.
- Liu, X., Burns, A. C. and Hou, Y. (2013). Comparing online and in-store shopping behavior towards luxury goods. *International Journal of Retail and Distribution Management*, 41(11), 885-900.
- Matsuoka, K., Hallak, R., Murayama, T. and Akiike, A. (2017). Examining the effects of perceived quality, value, satisfaction, and destination loyalty in Shioyama, Japan. *Tourism Review International*, 21(1), 3-16.
- Mandel, N., Petrova, P. K. and Cialdini, R. B. (2006). Images of success and the preference for luxury brands," *Journal of Consumer Psychology*, 16(1), 57-69.
- Müller, B., Florès, L., Agrebi, M. and Chandon, J. L. (2008). Do newsletters and consumer magazines have a moderating role? *Journal of Advertising Research*, 48(3), 465-472.
- Nunnally, J. (1978). *Psychometric methods*. New York, NY: McGraw Hill.
- Oliver, R. L. (1981). What is customer satisfaction? *Wharton Magazine*, 5(2), 36-41.
- Pawar, P. (2015). Assessment of brand image and brand attachment amongst cell phone users. *Journal of International Management Studies*, 15(3), 7-12.
- Park, C. W., Jaworski, B. J. and MacInnis, D. J. (1986). Strategic brand concept-image management," *Journal of Marketing*, 50(October), 135-145.
- Pérez, A. and Rodríguez del Bosque, I. (2015). Corporate social responsibility and customer loyalty: exploring the role of identification, satisfaction and type of company. *Journal of Services Marketing*, 29(1), 15-25.
- Rahayu, S. (2018). Customer satisfaction and service quality to develop trust and positive word of mouth in vocational education. *KnE Social Sciences*, 3(11), 356-371.
- Reza Jalilvand, M. and Samiei, N. (2012). The effect of electronic word of mouth on brand image and purchase intention: An empirical study in the automobile industry in Iran. *Marketing Intelligence and Planning*, 30(4), 460-476.
- Saqif, Z. and Razi, S. (2018). Brand placements in films and television: An effective marketing communication strategy to influence customers. *International Journal of Management Excellence*, 10(3), 1423-1433.
- Smith, T., Coyle, J. R., Lightfoot, E. and Scott, A. (2007). Reconsidering models of influence the relationship between consumer social networks and word-of-mouth effectiveness. *Journal of Advertising Research*, 47(4), 387-397.
- Sondoh Jr, S. L., Omar, M. W., Wahid, N. A., Ismail, I. and Harun, A. (2007). The effect of brand image on overall satisfaction and loyalty intention in the context of colour cosmetic. *Asian Academy of Management Journal*, 12(1), 83-107.

Spears, N. and Singh, S. N. (2004). Measuring attitude toward the brand and purchase intentions," *Journal of Current Issues and Research in Advertising*, 26 (2), 53-66.

Sundaram, D. S., Mitra, K. and Webster, C. (1998). Word-of-Mouth communications: A motivational analysis," in *Advances in Consumer Research*, Joseph W. Alba and J. Wesley Hutchinson (eds.), 25, pp.527-531.

Tellis, G.J. (1988). Advertising exposure, loyalty, and brand purchase: A two-stage model of choice." *Journal of Marketing Research*, 25(2), pp. 134-144.

Tien, D. H., Rivas, A. A. A. and Liao, Y. K. (2018). Examining the influence of customer-to-customer electronic word-of-mouth on purchase intention in social networking sites. *Asia Pacific Management Review*, 23(1),1-12.

Wolny, J. and Mueller, C. (2013). Analysis of fashion consumers' motives to engage in electronic word-of-mouth communication through social media platforms. *Journal of marketing management*, 29(5-6), 562-583.

Xiaobo, P. (2014). The path of influence of e-WOM on consumer purchase intention-based on electronic commerce in China. *Journal of Chemical and Pharmaceutical Research*, 6(6), 976-983.

Zaltman, G. and Burger, P. (1975). *Marketing research: Fundamentals and dynamics*. Hinsdale, Illinois: The Dryden Press.

Zhang, M., Hu, M., Guo, L. and Liu, W. (2017). Understanding relationships among customer experience, engagement, and word-of-mouth intention on online brand communities: The perspective of service ecosystem. *Internet Research*, 27(4), 839-857.

Appendix: List of Abbreviations used in the Empirical Analyses

A1: Brand image will be the priority when I purchase the product.

A2: Brand and design could coexist

A3: The design of luxury branded products is unusual.

B4: In purchasing a branded product, I will consider the social position as represented by the brand.

B5: I like use luxury branded products, because it can attract another people's attention.

B6: When using luxury branded products, it makes me feel happy.

B7: Using luxury branded products is a symbol of wealth.

C8: In making my decision, I will choose luxury branded products; even if the price is more expensive.

C9: I like luxury branded products because quality and design represent value for money.

C10: Luxury branded products can discriminate from different brand level.

D11: While referring to special luxury branded products, it makes me associate with the culture of its country of origin.

D12: The design of luxury branded products represents the culture of its origin country.

D13: I will purchase special luxury brands because its country of origin holds a special appeal for me.

E14: I use luxury branded goods because it can represent my personal character.

E15: Luxury branded products can reveal different identity.

E16: I like particular brands, because their design appeals to my style.

F17: I will buy luxury branded products only when I have spare money.

F18: I like branded products because they can represent my social position.

F19: Using branded products is a kind of pleasure.

F20: I use luxury branded products because of the personal preference.

G21: Before purchasing, I will seek others opinion or search for comment and opinion on the product.

- G22: I want to buy the luxury banded product as the result of the recommendation by others.
- G23: The opinion of relatives or friends will influence my decision.
- H24: When I talk about the luxury banded products, I used I usually give detailed information.
- H25: I often recommend to other people the luxury banded products I prefer.
- H26: Given a positive recommendation about a luxury banded product, I would purchase that product.
- H27: Using luxury branded products is a part of life.
- I28: I prefer to rely on my own experience in order to let other users more greatly appreciate the brand.
- I29: Because of the favors of particular luxury banded products, I would like to share my experience.
- I30: I would not like other customers be cheated, therefore I share my own experiences.
- J31: I will recommend others to purchase this luxury banded product because of the added value provide by the retailers.
- J32: I will give detailed comments in order to obtain the compliments.
- J33: I will share the experience because of the reward after commenting. (for example: the credits provided by the forum website)
- J34: Luxury branded products shops provide more information.
- K35: Luxury branded products provide high quality products.
- K36: Luxury branded products provide high level service.
- K37: Luxury branded products provide high standard after-care service.
- K38: Luxury branded products will regard customer satisfaction as a priority.
- K39: Luxury branded products provide proper price.
- L40: Once I like one luxury banded product, I will purchase the same brand in the future.
- L41: Even other brands offering promotion; I will still choose the brand I like.
- L42: I will recommend relatives and friends to purchase the luxury banded product I like.
- L43: Once I use particular luxury banded products, I will purchase the related products of this brand.



INVESTIGATION OF THE RELATIONSHIP BETWEEN ECONOMIC COMPLEXITY LEVEL AND HUMAN DEVELOPMENT LEVEL: COMPARISON OF DEVELOPED AND DEVELOPING COUNTRIES

DOI: 10.17261/Pressacademia.2019.1129

JMML-V.6-ISS.3-2019(4)-p.162-174

Semanur Soyyigit¹, Ercan Eren², Elife Akis³

¹Erzincan Binali Yildirim University, Department of Economics, Yalnizbag Campus, Erzincan, Turkey,

semanur.soyyigit@erzincan.edu.tr, ORCID: 0000-0002-5679-6875

²Yildiz Technical University, Department of Economics, Davutpasa Campus, Istanbul, Turkey,

eren@yildiz.edu.tr, ORCID: 0000-0003-4513-278X

³Istanbul University, Department of Economics, Beyazit Campus, Istanbul, Turkey,

elifakis@istanbul.edu.tr, ORCID: 0000-0002-5443-4045

Date Received: June 25, 2019

Date Accepted: September 23, 2019

To cite this document

Soyyigit, S., Eren, E., Akis, E., (2019). Investigation of the relationship between economic complexity level and human development level: comparison of developed and developing countries. *Journal of Management, Marketing and Logistics (JMML)*, V.6(3), p.162-174.

Permament link to this document: <http://doi.org/10.17261/Pressacademia.2019.1129>

Copyright: Published by PressAcademia and limited licenced re-use rights only.

ABSTRACT

Purpose- The purpose of this study is to examine whether there is a difference between developed and developing countries in terms of the relationship between economic complexity level and human development level. Examining whether there is a long-term relationship between these two variables constitutes the main motivation of the study.

Methodology- In the present study, Bai and Carrion-I-Silvestre cointegration test has been applied to the data for G20 countries within the period from 1992 to 2017.

Findings- For all countries except the US, HDI has an impact on the ECI. The impact of HDI on ECI is negative in Germany, France, United Kingdom, Italy and Japan while it is positive in other countries. According to these results; in developed countries except Canada and Australia, human development has a negative impact on economic complexity level.

Conclusion- Results mean that improvements in indicators such as education, health, etc. in developing G20 countries develop human development level, and this development increases the sophistication of the economy; the quality of the products produced and exported by countries is developing to reflect the ability to use more complex knowledge together.

Keywords: Economic complexity level, human development level, panel data analysis, panel cointegration analysis

JEL Codes: O15, C23, L16

1. INTRODUCTION

Considering the basis of the growth and development theories in the economic literature, it is seen that the growth theories have been developed to find solutions to the problems of the developed countries and development theories have been developed to find solutions to the problems of the developing countries. In this context, it is seen that development theories have been developed since the 1950s after the Second World War. In fact, these theories have emerged from the recommendations given to the poor countries, which have recently gained their independence, on how to develop the natural resources which are the only assets that these countries have. The content of these recommendations is how to ensure the structural transformation in the economy over time and how to take the right steps in areas such as agriculture, industry, foreign trade (Berber, 2011). These studies were based on market efficiency idea which is at the core of neo-classical thought in order to induce the structural

transformation in which manufacturing sector has a central role to enhance economic development. Additional contributions to the literature came from the Economic Commission for Latin America and the Caribbean (ECLAC). In this context, the study of R. Prebisch and C. Furtado focused on the two-pole world faced by developing countries. According to this; there were a global economic structure with two distinct poles, namely 'centre' and 'periphery' and differences existed between these two poles in terms of productive structure. In the studies, the problems arising from this dual structure such as international trade, technological differences, balance of payments and the state intervention were discussed (Gala et al, 2018).

Gala et al (2018) stated that productive sectors differ in terms of their growth and development potential and manufacturing industry sectors have the dynamics that would activate the development process in terms of increasing returns, high technological change, innovation and the division of labour. According to this; the agriculture and mining sectors do not allow such a technological change. On the other hand, the empirical testing of the arguments of these economists has been made possible with the development of economic complexity approach by Hausmann and Hidalgo.

In this study, by relying on the ideas that the sophistication levels of the products produced and exported by the countries determines the level of economic complexity of these countries and that economic complexity used commonly to explain structural transformation, it is aimed to test whether the 'economic complexity' concept also explain human development of the countries. For this purpose, the relationship between economic complexity and human development levels is examined for the G20 community, which is a community that contains the world's 19 largest economies and which is composed of both developed and developing countries. Within this context, economic complexity concept and, the relationship between this concept and human development level are explained in Section 2. Literature review is presented in Section 3 and economic review of G20 countries is given in Section 4. In Section 5, methodological explanation and introduction of the data are given. Finally, findings of the study are presented in Section 6.

2. THE RELATIONSHIP BETWEEN ECONOMIC COMPLEXITY AND HUMAN DEVELOPMENT LEVELS

The concept of economic complexity has begun to be used frequently in the literature after being revealed with the study 'The Atlas of Economic Complexity' by Hausmann et al (2011). Hausmann et al (2011), with reference to the idea of A. Smith that the division of the labour is the secret of the wealth of the nations, made more modern interpretation of this idea saying that division of labour gives opportunity to access to the knowledge that is not possible to reach individually. Because the knowledge in a society is not merely the sum of the information that individuals in this society have. The diversification of the knowledge among individuals and the ability to use existing knowledge by collating via complex interaction networks makes this knowledge more effective. The authors who distinguish explicit knowledge from tacit knowledge call the aggregate of this tacit knowledge 'capabilities'. Within this context, complexity level of an economy is related to diversification of useful knowledge it contains. In other words, while economic complexity level of an economy is determined by how effectively existing knowledge is combined, the result obtained reflects on the composition of production (Hausmann et al, 2011).

Hausmann et al. (2011) who developed an index measures the level of economic complexity, have made use of international trade data. The conclusion of this method is the existence of a relation between sophistication level of the products which the country exports and the complexity level of this economy. Hence, countries can increase their levels of economic complexity by increasing their competitiveness in industries involving complex / sophisticated products.

Hidalgo (2009) states that what a country produces and exports becomes more substantial rather than how much it produces and exports. In other words, it is a situation in which the quality of production and export becomes more important than its volume. Because the degree of sophistication of each product is not same and, what will determine the long-term income levels of countries will be the sophistication level rather than the size of the trade volumes (Hidalgo, 2009).

Hidalgo and Hausmann (2009) identified the relationships between the economic complexity index and various macroeconomic indicators as a result of their empirical study. From this point of view, they made inferences about the importance of the level of economic complexity. Accordingly, economic complexity index; (i) gives information about the existing set of knowledge and capabilities of a country, (ii) has a strong correlation with per capita income level, (iii) enables to estimate future growth, (iv) is determinant on the complexity level of export structure for future.

In fact, all these studies link the country's production structure with the economic development model. This relationship emphasizes the role of a transformation from a natural-based and agricultural production structure to a more sophisticated structure (Lapatinas, 2016). This is in fact the structural transformation which is defined as the increase of share of industry sector in some indicators such as total output, employment and export accompanied by a decrease of share of agricultural sector (Berber, 2011).

So, what is the relationship between the level of economic complexity that expresses the structural transformation of countries and the level of human development? Before answering this question, it is useful to stand on the concept of human development.

The concept of human development and its measurement, the Human Development Index (HDI), was first used in 1990 in the Human Development Report published by the United Nations. The concept of human development has two dimensions: first, the formation of human abilities such as health, knowledge and skills; the second is the benefits that people get from these abilities (being active in cultural, social and political affairs etc.). The main motivation for this concept came from the fact that there is no direct link between income growth and human development. Here, it is stated that income is not just a result but also a tool. It is stated that income can be spent on medicines as well as on narcotic and therefore it is more important how to use rather than income level. In addition, the examples such as the countries with low income levels and high levels of human development, and the countries with high income levels and low levels of human development, have also revealed this distinction. In this sense, human development refers to the process of developing people's choices and the level of welfare they achieve (UNDP, 1990).

There are opinions about that both positive and negative interactions exist between economic complexity and human development level (UNDP, 1990). According to this; level of economic complexity has a positive impact on people by increasing access to facilities such as better education and better health care etc., by enabling them to achieve a better standard of living. As well as this direct impact, it is also stated that level of economic complexity can have some positive impacts indirectly. According to this; economic complexity can make people open to new products; can offer more options and lifestyle. Thus, it can support human development. However, some negative effects are likely to occur. Ecological unsustainability caused by consumption, production and resource use of increasing demand can be expressed as one of these negative effects. In addition, the uncertainty of decision processes due to increasing complexity can lead to a dissatisfaction in individuals (UNDP, 1990). On the other hand, it is also possible for human development level to have an impact on the economic complexity level. When there is a progress in the indicators affecting human development level such as education, health etc. there may be an increase in the ability of the economy to combine existing knowledge and to produce more sophisticated products.

3. LITERATURE REVIEW

The economic complexity index is a measure that has recently started to take part in empirical studies in the field of economics. For this reason, the number of studies dealing with the direct relationship between economic complexity and human development level is quite low. On the other hand, studies examining the relationship between economic complexity and per capita income and income distribution are available in the literature. In one of these studies, Hartmann et al (2017) analyzed the relationship among economic complexity, institutional structure and income inequality by using indicators such as economic complexity index, international trade, Gini coefficient, per capita income, average schooling rate, population, political stability and government effectiveness. The results of the analysis showed that there is a negative relationship between high economic complexity and income inequality (Hartmann et al., 2017).

In another study, Stojkoski and Kocarev (2017) examined the relationship between economic complexity and growth in Southeast and Central European countries. Their findings revealed that the level of economic complexity is an explanatory variable over long-term growth; however, they have found that productive information, which is the basis of economic complexity, is not explanatory on the change in income levels of countries in the short term (Stojkoski and Kocarev, 2017).

Hartmann's study (2014) which is one of the studies on the interaction between the level of economic complexity and the level of human development, analyses the effect of economic diversity on the level of human development and per capita income via simple regression models and covers 121 countries and 772 sectors. In the analysis using the export data of 1, 2 and 4 digit items based on the SITC Rev.4 classification, the Entropy Index (EI), Herfindahl-Hirschman Index (HHI) and Revealed Comparative Index (RCA) were used to measure export diversification. In the regression models where these indices were used as independent variables, the human development index and the per capita income were used as dependent variables. The results of the analysis indicated that all indices representing the export diversity were effective on dependent variables regardless of which index or how many digit export data were used. On the other hand, economic diversity is more effective on human development than on per capita income (Hartmann, 2014).

Lapatinas (2016) analysed the relationship between the economic complexity and human development index variables by using regression analysis for 126 countries. As a result of the analysis, it was concluded that economic sophistication and export diversity, which are the driving force of economic development, have no effect on human development.

Ferraz et al. (2018) tested how effective the Latin American and Asian countries can be in transforming economic complexity into human development. As a result of the analysis using data envelopment analysis, all Asian countries except China and the

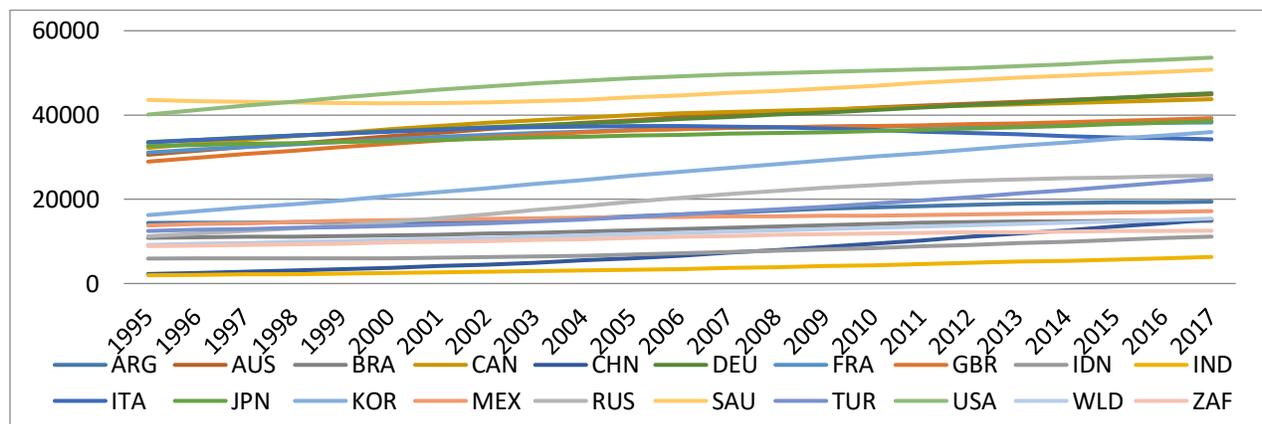
Philippines were found to be effective in this transformation in 2014. They also showed that Cuba has a good criterion in terms of efficiency. In addition, Japan, South Korea and Singapore have become more effective over time. The result of this study is that, in contrast to the findings of Lapatinas (2016) the more sophisticated countries are more effective in creating human development.

Gala et al (2018), using the annual data for 147 countries in the period of 1979-2011, tested whether the complexity of the export structures of the countries explained the convergence or divergence between rich and poor countries. Their findings show that countries with high export sophistication are stronger in closing the income gap with developed countries than countries with low export sophistication. Therefore, the higher the economic complexity of the export products of the developing countries, the higher the convergence of the revenues of these countries to the developed country level.

4. ECONOMIC OUTLOOK IN G-20 COMMUNITY

Before presenting the results of the analysis, examination of the G-20 countries included in the analysis in terms of some indicators will provide an idea in terms of evaluating the findings of the analysis. For this purpose, Graph 1 presents the per capita income levels of the countries in question in comparison with each other and the world average.

Figure 1: GDP per capita (PPP, US \$, 2011)

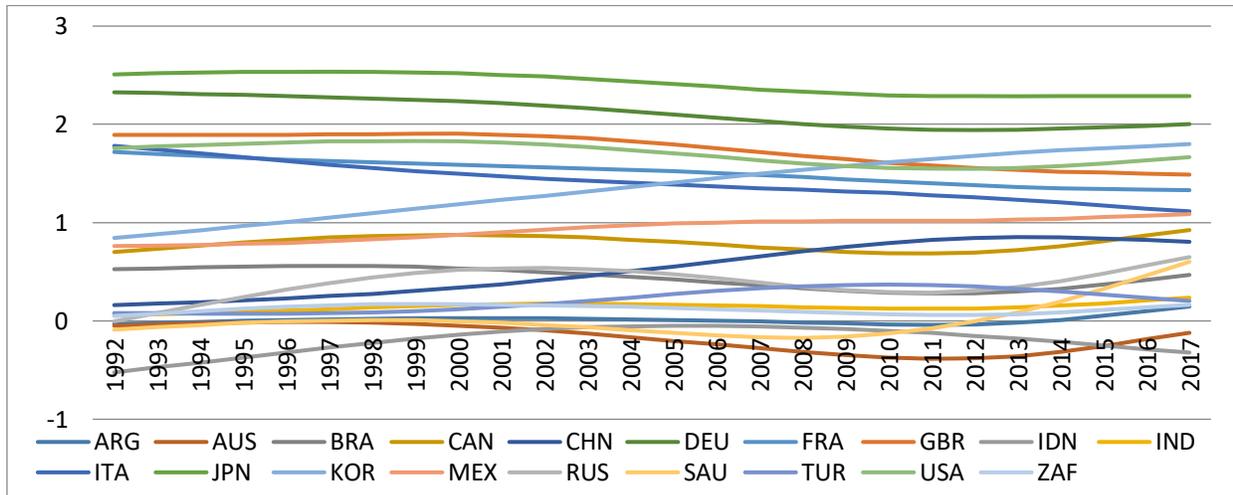


Note: The trends of the series were obtained by using the Hodrick - Prescott method.

Source: Organized by using World Bank statistics.

Figure 1 shows the per capita income of G-20 countries. Accordingly, the country with the highest per capita income is the United States; followed by Saudi Arabia, Germany, Australia and Canada. Following these 5 countries are the United Kingdom, France, Japan and Italy. Among the countries that are in the top 9 in terms of income per capita, all countries except Saudi Arabia are in the developed country class. As it is known, Saudi Arabia is a developing country with high per capita income due to high oil export revenues. Among the other developing countries, South Korea shows a distinct difference. South Korea is followed by Russia, Turkey and Argentina. South Africa, China, India and Indonesia stay below the world average per capita income.

Figure 2: Economic Complexity Level in G-20 Countries

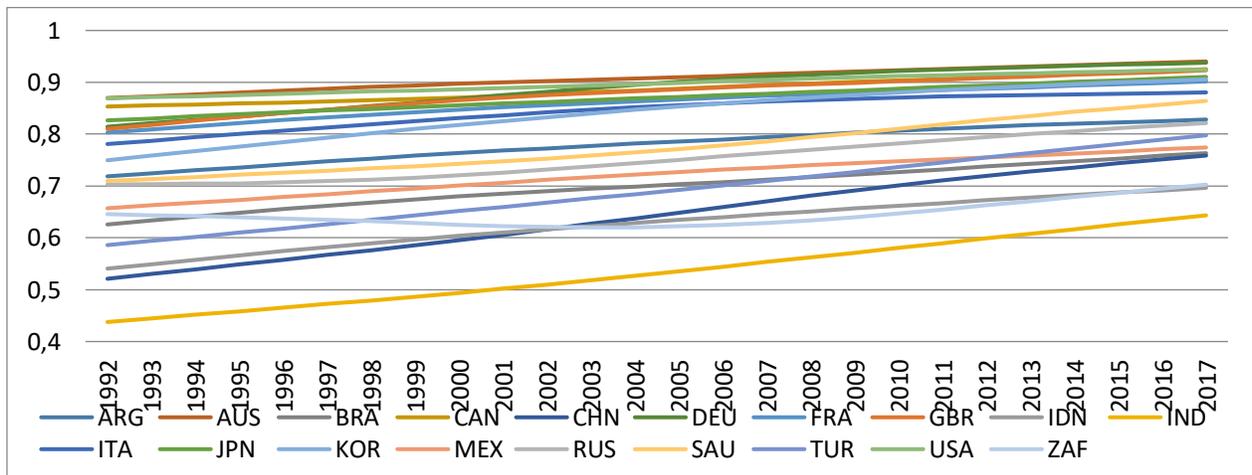


Note: The trends of the series were obtained by using the Hodrick - Prescott method.

Source: Organized by using MIT - OEC statistics.

When the countries are evaluated in terms of economic complexity, Japan ranks first; followed by Germany, United Kingdom, USA, France and Italy. It is observed that the level of economic complexity of South Korea has reached the level of developed countries since 2005. The economic complexity levels of Australia and Canada are at the level of developing countries.

Figure 3: Human Development Level in G-20 Countries

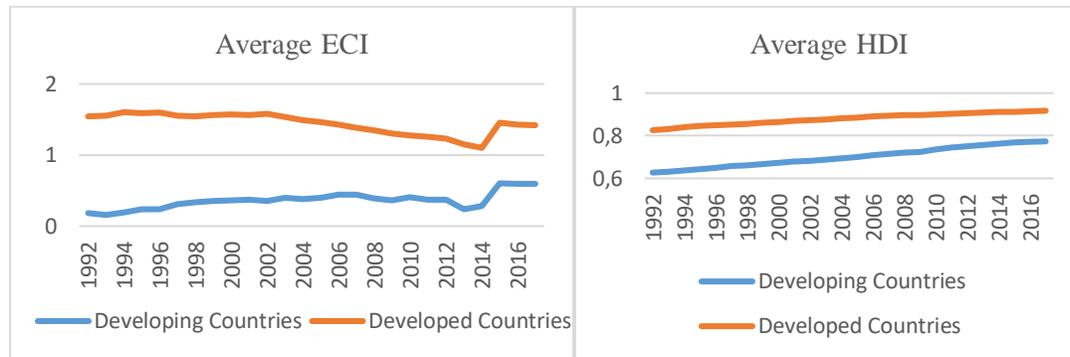


Note: The trends of the series were obtained by using the Hodrick - Prescott method.

Source: Organized by using United Nations statistics.

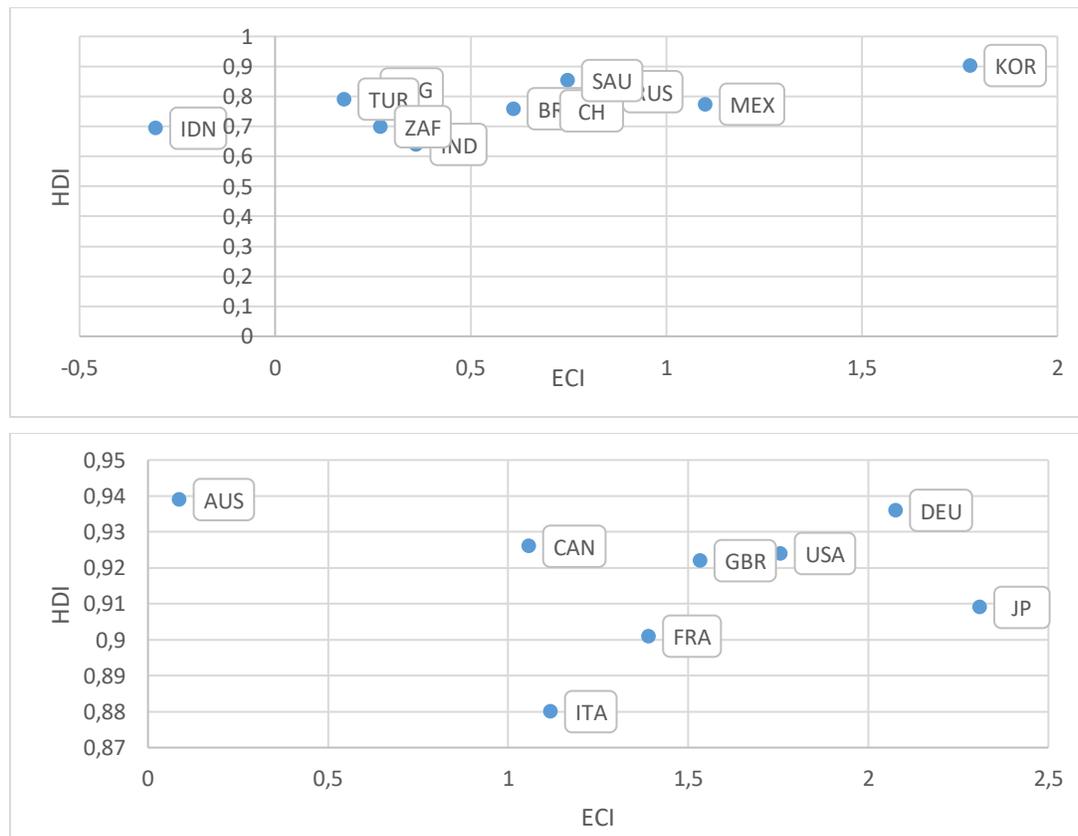
As can be seen in Figure 3, where there is a comparison of countries according to human development indices, there is a clear distinction between developed and developing countries; developed countries constitute a cluster at the top of the chart and developing countries are located as a separate cluster under the developed countries. The only exception here is South Korea. In the list of human development index, South Korea is located in the cluster of developed countries.

Figure 4: Average ECI and HDI values of Developing and Developed Countries (1992-2017)



When the average ECI and HDI values are drawn within the framework of developing and developed countries, as can be seen in Graph 4, while the economic complexity levels of developed countries are decreasing in average over time, it is seen that there is an average increase for developing countries. In this sense, it can be said that the difference between the economic complexity levels of developed and developing countries of G-20 community tends to decrease in time. When evaluated in terms of human development levels, there is an average increase in this index in terms of both developed and developing countries; however, it can be stated that the gap between the developed and developing countries is in a decreasing trend since the increase in developing countries is higher.

Figure 5: ECI-HDI Distributions of Developing and Developed Countries



As seen in Graph 5, Korea, which is located in the developing country group, shows a marked difference from the other countries in this group. Korea has higher value both in ECI and HDI. In this group, Indonesia is another country that exhibits markedly difference from other countries in the group. The ECI value of Indonesia is on the negative axis and the HDI value is relatively low. When we look at the developing countries, it is observed that Australia is different from the developed countries in G-20. Although Australia's ECI value is quite low, the country has the highest HDI value among developed countries.

5. DATA AND ECONOMETRIC METHODOLOGY

As mentioned at the beginning of the study, the hypothesis of this study is to find out whether there is a relationship between the level of economic complexity and the level of human development in the G-20 community. For this purpose, panel cointegration analysis is applied to the HDI, which measures the level of human development, and the ECI, which measures the level of economic sophistication.

Table 1: Variables and the data sources

Variable Name	Explanation of the variable	Data source
ECI	Economic complexity index	United Nations http://hdr.undp.org/en/data#
HDI	Human development index	MIT – Observatory of Economic Complexity https://atlas.media.mit.edu/en/rankings/country/eci/

G-20 community consists of 19 countries (Argentina, Australia, Brazil, Canada, China, Germany, France, United Kingdom, Indonesia, India, Italy, Japan, Korea, Mexico, Russia, Saudi Arabia, Turkey, the United States ve South Africa) and European Union Commission. According to the classification of the United Nations; Australia, Canada, Germany, France, Italy, United Kingdom, Japan and the US are developed countries while the other countries are considered as developing countries (UN, 2019). The analysis period was limited to the period of 1992-2017 due to the constraint of the data of Russia. Before the explanation of the findings, information is given about the theoretical method used.

Panel cointegration analysis is a method used to analyze the long-term relationship between series of panels as in time series analysis (Şak, 2015). The cointegration analysis is based on the idea that if the order of integration of the non-stationary series is the same, then the linear compositions of these series may be stationary and that there may be a long-term relationship between the series. Based on this idea, panel cointegration tests are used in the panel data analysis in order to test whether there is a long-term relationship between the variables despite the permanent shocks affecting the system (Yerdelen Tatoğlu, 2013).

Therefore, in order for cointegration tests to be applied to the panel data, firstly, the series must have unit roots at the level and become stable at the same level. The unit root tests used in the panel data analysis vary according to whether there is a cross-sectional dependence in the series. Therefore, it is necessary to test the cross-sectional dependence of the series first. Various tests have been developed to examine the cross-sectional dependence of the series in panel data analysis. The first one is the Lagrange Multiplier (LM) test developed by Breusch and Pagan. The test statistic of the LM test (CDLM1) used when the time dimension of the panel is greater than the cross-sectional dimension ($T > N$) is as follows (Pesaran, 2004):

$$CDLM_1 = T \sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij}^2 \quad (1)$$

$\hat{\rho}_{ij}^2$ in Equation (1) refers to the estimation of pairwise correlation of the residuals. Breusch and Pagan showed that CDLM1 test statistic was distributed asymptotically χ^2 under the null hypothesis that there is no cross-sectional dependence. Pesaran has developed a new test that can be used in cases where N and T have large values. The test statistic for this test (CDLM2) is the scaled version of CDLM1 (Pesaran, 2004):

$$CDLM_2 = \sqrt{\frac{1}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^N (T\hat{\rho}_{ij}^2 - 1) \quad (2)$$

Pesaran et al. then developed a test with a different version of the LM test. The bias-corrected LM statistic of this test (LMadj) is as follow (Pan et al., 2015):

$$LM_{adj} = \sqrt{\left(\frac{2T}{N(N-1)}\right)} \sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij} \frac{(T-k)\hat{\rho}_{ij}^2 - \mu_{Tij}}{\sqrt{v_{Tij}^2}} \quad (3)$$

μ_{Tij} and v_{Tij}^2 in Equation (3) refers to the average and the variance of $(T-k)\hat{\rho}_{ij}^2$, respectively.

In econometric analysis, when working with non-stationary series, spurious regression problem is encountered. Therefore, it is necessary to ensure that the series are stationary before the analysis. The unit root tests used in the determination of the stationarity in the panel data analysis are separated as the first generation tests and the second generation tests. First generation tests are used in the assumption that there is no cross-sectional dependence in the series, while second generation tests are used in case of the existence of cross-sectional dependence (Yerdelen Tatoğlu, 2013).

As can be seen in the findings section in detail, the cross-section dependence was determined in both HDI and ECI series used in this study. For this reason, Cross-Sectionally Augmented Dickey-Fuller (CADF) test, which is a second-generation test, was used to determine the stationarity of the series. This test can be used both when the cross-sectional dimension is greater than the time dimension ($N > T$) and when the time dimension is greater than the cross-sectional dimension ($T > N$). In addition, Monte Carlo simulations have shown that even for small N and T values, strong results are obtained (Pesaran, 2007).

The following model is used based on the assumptions that y_{it} is an observation belongs to cross-section i and to time t and that it is built depending on the simple dynamic linear heterogeneous panel data model (Pesaran, 2007):

$$y_{it} = (1 - \phi_i)\mu_i + \phi_i y_{i,t-1} + u_{it}, \quad i = 1, \dots, N; \quad t = 1, \dots, T \quad (4)$$

The initial value y_{i0} has a density function with finite means and variances, and the error term u_{it} has a single-factor structure.

$$u_{it} = \gamma_i f_t + \varepsilon_{it} \quad (5)$$

In Equation (5), f_t refers to unobserved common effect and ε_{it} refers to the unit-specific error term. Then, Equation (4) and Equation (5) can be written as follow:

$$\Delta y_{it} = \alpha_i + \beta_i y_{i,t-1} + \gamma_i f_t + \varepsilon_{it} \quad (6)$$

Based on $\alpha_i = (1 - \phi_i)\mu_i$, $\beta_i = -(1 - \phi_i)$ and $\Delta y_{it} = y_{it} - y_{i,t-1}$; hypothesis of the unit root test is stated as follows:

$$H_0: \beta_i = 0 \text{ (unit root for all } i\text{'s)}$$

$$H_1: \beta_i < 0 \text{ (stationary)}$$

CADF test gives test statistics for both cross-sections and overall panel. Test statistics for the overall panel (CIPS) are calculated by taking the average of test statistics for cross-sections (Pesaran, 2007):

$$CIPS = N^{-1} \sum_{i=1}^N t_i(N, T) \quad (7)$$

In Equation (7), $t_i(N, T)$ refers to the CADF test statistic that belongs to cross-section i (Pesaran, 2007).

As is seen in the findings section, CADF test results show that HDI and ECI have unit root at level and both variables become stationary at first-difference. If economic variables contain unit roots, the linear combination of these series may be stationary and there may also be a long-term relationship between the variables. Despite the persistent shocks affecting the system, the existence of long-term relationship between variables can be examined by panel cointegration tests (Yerdelen Tatoğlu, 2013).

Panel cointegration tests are separated into two according to whether there is cross-sectional dependence in the residuals of the long-term equation between variables. If there is no cross-sectional dependence of the long-term equation between variables, the first-generation cointegration tests and second-generation cointegration tests, if any, are applied. In this study, Bai and Carrion-i-Silvestre test which is a second-generation panel cointegration test, was applied due to the existence of cross-sectional dependence of long-term equation.

Bai and Carrion-i-Silvestre, who used a common factor model to define common shocks and common stochastic trends, acted from the model in Equation (8) (Bai and Carrion-I-Silvestre, 2013):

$$Y_{i,t} = \mu_i + \gamma_i t + X'_{i,t} \beta_i + F'_t \lambda_i + e_{i,t}, \quad i = 1, 2, \dots, N; \quad t = 1, 2, \dots, T \quad (8)$$

In Equation (8), $\mu_i + \gamma_i t$ refers to deterministic component, $X_{i,t}$ refers to vector of observable I(1) variables, F_t refers to the unobservable common shock vector whose effect differs by cross-section units via λ_i and, $e_{i,t}$ refers to the error term vector specific to cross-section units. When integration order of F_t is I(1), this term refers to unobservable cross-section common stochastic trend in this cointegration test. If $e_{i,t}$ is stationary at level, then it is said that $Y_{i,t}$, $X_{i,t}$ and F_t are cointegrated, even if $Y_{i,t}$ and $X_{i,t}$ are not cointegrated. That is to say, cointegration between $Y_{i,t}$ ve $X_{i,t}$ is allowed even a small number of unobservable common stochastic trend. $Y_{i,t}$ and $X_{i,t}$ becomes cointegrated, when both $e_{i,t}$ and F_t are stationary at level. In this situation, F_t is accepted as common shock that capture the cross-section dependence. In sum, it is aimed in this test not only to control of cross-section dependence, but also to determine whether F_t which is unobservable component, is stationary.

Bai and Carrion-i-Silvestre (Bai and Carrion-I-Silvestre, 2013) used the square of the MSB (Modified Sargan - Bhargava) statistics to test the H_0 hypothesis representing that there was no cointegration. The MSB statistics have some optimal features among invariant tests against heterogeneous trends. When calculating panel cointegration test statistics, individual statistics that are calculated for each cross-section unit in different methods, are used. Bai - Carrion-i-Silvestre test offers three separate test statistics (Bai and Carrion-I-Silvestre, 2013): MSB, P and P_m . The first of the methods used to obtain panel test statistic by combining individual statistics, standardizes the average of these individual statistics. Accordingly, MSB statistic is as follows:

$$MSB_{\xi} = \sqrt{N} \frac{\overline{MSB_{\xi}(i)} - \bar{\vartheta}}{\bar{\zeta}} \sim N(0,1) \quad (9)$$

The terms in Equation (9) can be written as follows:

$$\overline{MSB_{\xi}(i)} = N^{-1} \sum_{i=1}^N MSB_{\xi}(i) \quad (10)$$

$$\bar{\vartheta} = N^{-1} \sum_{i=1}^N \vartheta_i \quad (11)$$

$$\bar{\zeta}^2 = N^{-1} \sum_{i=1}^N \zeta_i^2 \quad (12)$$

In equations above, ϑ_i ve ζ_i correspond to mean and variance of $MSB_{\xi}(i)$'s, respectively.

The second method is to define panel statistics through the combination of individual p-values. Here, under the assumption that individual error terms $\xi_{i,t}$ do not have cross-section dependency, Fisher type test statistics are obtained as follows:

$$P = -2 \sum_{i=1}^N \ln p_i \sim \chi^2_{2N} \quad (13)$$

In Equation (13), p_i refers to p-values belong to $MSB_{\xi}(i)$ for each cross-section. Another method is a calculation method of test statistics suggested by Choi, when $N \rightarrow \infty$. Accordingly, P_m test statistic is as follows:

$$P_m = \frac{-2 \sum_{i=1}^N \ln p_i - 2N}{\sqrt{4N}} \sim N(0,1) \quad (14)$$

If a long-term relationship is found between the variables as a result of the cointegration test, this long-term relationship can be estimated. Delta test is used before the cointegration coefficients are estimated to determine whether the slope coefficients are homogeneous or heterogeneous. Since the countries analyzed in the study covered both developed and developing countries and

these countries have different characteristics in economic and socio-cultural terms, long-term coefficient estimation was made by means of the Augmented Mean Group (AMG) method. The AMG method developed by Eberhardt and Bond (Eberhardt and Bond, 2009) is an estimation method that takes into account the cross-sectional dependence. It can also calculate the cointegration coefficients of the panel and the countries that make up the panel (Eberhardt and Bond, 2009).

6. FINDINGS

In this part of the study, findings of the tests explained methodological above are presented. Accordingly, results of the cross-sectional dependence test belonging to both the variables and the models are presented in Table 2.

Table 2: Results of Cross-Sectional Dependence Test

	ECI		HDI		Model (Dependent variable: ECI)		Model (Dependent variable: HDI)	
	Test statistics	p value	Test statistics	p value	Test statistics	p value	Test statistics	p value
CDLM1	1475.065	0.000	3930.3	0.000	1625	0.000	1669	0.000
CDLM2	69.48834	0.000	202.2523	0.000	12.02	0.000	227.8	0.000
LMadj	69.10834	0.000	201.8723	0.000	217.8	0.000	34.5	0.000

According to the results of the cross-sectional dependence test in Table 2, since the probability value is less than 0.05, the null hypothesis that there is no cross-sectional dependence is rejected. In other words, there is a cross-sectional dependence in variables and models. The results of the CADF test that is one of the second generation unit root tests which takes into account the cross-sectional dependence, are presented in Table 3.

Table 3: CADF Unit-Root Test Results

Variables	CIPS statistics - Level		CIPS Statistics – First difference	
	Constant	Constant and trend	Constant	Constant and trend
ECI	-1.59	-2.462	-2.669	-2.901
HDI	-2.24	-2.507	-2.535	-2.743

Critical values for 0.01, 0.05 ve 0.10 significance levels are -2.38, -2.20 ve -2.11 in constant model and -2.88, -2.72 ve -2.63 in constant-trend model.

According to these results, ECI variable has unit-root in both the constant and constant-trend model, and it becomes stationary at first difference. When it comes to HDI variable, it is stationary at level in constant model with 0.05 significance level and it has unit root at level in constant-trend model. HDI becomes stationary at first difference. Hence, it is seen that both of the variables becomes stationary at first-difference meaning that integration level of both are I(1). This result suggests that there may be a long-term relationship between these variables. In this study, Bai and Carrion-i-Silvestre cointegration test which is a second-generation test has been applied to the variables. The reason why second-generation cointegration test is chosen is the detection of cross-sectional dependence in residuals of the models (Table 2).

Table 4: Cointegration Test Results

	Dependent variable : ECI				Dependent variable: HDI			
	Constant model		Constant-trend model		Constant model		Constant-trend model	
	Test statistics	p-value	Test statistics	p-value	Test statistics	p-value	Test statistics	p-value
MSB	-1,436	0,076	41,296	1,000	-1,535	0,062	3,713	1,000
P	2,156	0,016	7,744	0,000	1,249	0,106	-1,343	0,910
P _m	56,8	0,025	105,508	0.000	48,887	0,111	26,292	0,924

In the Bai and Carrion-i-Silvestre cointegration test, alternative hypothesis that representing the existence of cointegration is tested against the null hypothesis representing that there is no cointegration. The probability value of at least one of the MSB, P

and Pm values should be less than 0.05 for the null hypothesis to be rejected. When the results in Table 4 are evaluated, there is no long-term relationship between variables in the model where HDI is dependent variable; however, in the model where the ECI is a dependent variable, it is found that there is a long-term relationship between the variables.

Table 5: Estimated Long Term Coefficient of the Panel

Independent variable	Coefficient	p-value
HDI	1,191,478	0,132

After existence of cointegration between variables is revealed, long-term coefficient is estimated. Delta test is applied to determine whether the long-term coefficients are homogeneous or heterogeneous. However, since the countries analyzed in this study have very different economic, social and cultural characteristics, it is assumed that long-term coefficients are heterogeneous without applying Delta test. Table 5 presents the coefficient estimation results for the overall panel under the assumption that the long-term coefficients are heterogeneous. According to the results in Table 5, there is no significant relationship between HDI and ECI for the overall panel, assuming that long-term coefficients are heterogeneous. The long-term coefficient estimates for the cross-section units are presented in Table 6.

Table 6: Coefficient Estimates for Cross-Section Units (Dependent Variable: ECI)

Countries	Coefficient	p-value
Argentina	36,227	0,000*
Australia	18,411	0,054***
Brazil	0,7188	0,096***
Canada	47,575	0,000*
China	22,384	0,000*
Germany	-21,503	0,000*
France	-30,278	0,000*
United Kingdom	-25,155	0,000*
Indonesia	15,877	0,036**
India	13,517	0,000*
Italy	-61,485	0,000*
Japan	-29,867	0,001*
Korea	56,649	0,000*
Mexico	37,993	0,000*
Russia	56,018	0,000*
Saudi Arabia	66,483	0,000*
Turkey	0,6381	0,095***
United States	-0,4818	0,488
South Africa	14,779	0,023**

*, ** and *** correspond to 0.01, 0.05 ve 0.10 significance levels, respectively.

According to the estimation results in Table 6; For all countries except the US, HDI has an impact on the ECI. This impact is at 0.10 significance level in Australia, Brazil and Turkey ; at 0.05 significance level in South Africa; and for all other countries is at 0.01 significance level. The impact of HDI on ECI is negative in Germany, France, United Kingdom, Italy and Japan while it is positive in other countries. According to these results; in developed countries except Canada and Australia, human development has a negative impact on economic complexity level. The common characteristic of the countries where the level of human development positively affects the level of economic complexity is that they are developing countries (except Canada and Australia).

7. CONCLUSION

It is a known phenomenon that growth of GDP and of per capita income in one country to be a necessary but not sufficient factor for increasing the level of human development in that country. Developed countries, which have high income levels, have increased also their levels of human development. However, this situation is a more structural problem in developing countries.

For this reason, in order to overcome this problem in developing countries, it is necessary to provide structural transformation which developed countries has overcome. Thus, it is aimed in this study to examine the interaction between human development index and the economic complexity index which represents the structural transformation and which have just started to be used in the literature.

In the literature, the positive and negative effects of economic complexity on human development are mentioned. However, the level of human development may also affect the level of economic complexity. It is also probable that education, health and income, which are the most basic indicators of human development index, affect the production and export sophistication, which expresses the level of complexity of the economy. For this purpose, the long-term relationship between these two variables has been tested for two models where both the level of economic complexity and the level of human development are considered to be dependent variables; long term relationship was determined in the model where the economic complexity index was dependent variable and the human development index was independent variable. This result shows that there is a long-term relationship between variables, despite persistent shocks affecting the system. Therefore, the level of human development has an impact on the level of economic complexity.

Although the analysis is based on the G-20 community, which consist of the largest 19 economies in the world, the member countries of this community exhibit very different characteristics in economic and socio-cultural terms. For this reason, pooled model was not used in the estimation of long-term coefficients in the analysis; long-term coefficients for each country were estimated separately. Long-term coefficients were found to be significant statistically for all countries in the community except the United States. Among these countries, the long-term coefficients of Germany, France, the United Kingdom, Italy and Japan have negative values. The common feature of these countries is that they are among the developed countries of the G20 community. This negative impact can be better understood if these result is considered in conjunction with Graph 4, and if it is remembered that the average ECI decreases accompanied by an increase in the average HDI in developed countries. Since the share of service sector in national income and export within developed countries increased and the economic complexity index was calculated by considering the products exported by the countries, it is seen that in developed countries ECI value is in the decreasing trend. On the other hand, the level of human development in these countries is increasing. Among the developed countries, Australia and Canada are the exceptions to this negative relationship.

When developing countries are considered, it is seen that human development level has positive effect on economic complexity level in all of these countries. This result means that improvements in indicators such as education, health, etc. develop human development, and this development increases the sophistication of the economy; the quality of the products produced and exported by countries is developing to reflect the ability to use more complex knowledge together.

REFERENCES

- Bai, J., & Carrion-i-Silvestre, J.L. (2013). Testing panel cointegration with unobservable dynamic common factors that are correlated with the regressors. *Econometrics Journal*, 16: 222-249.
- Berber, M. (2011). İktisadi büyüme ve kalkınma. Trabzon: Derya Kitabevi.
- Eberhardt, M., & Bond, S. (2009). Cross-section dependence in nonstationary panel models: A novel estimator. *MPRA*, 17870.
- Ferraz, D., Morales, H.F. Campoli, J.S., Riberio de Oliveira, F.C., & Aparecida do Nascimento Rebelatto, D. (2018). Economic complexity and human development: DEA performance measurement in Asia and Latin America. *Gestão & Produção*, 25(4): 839-853.
- Gala, P., Rocha, I., & Magacho, G. (2018). The structuralist revenge: Economic complexity as an important dimension to evaluate growth and development. *Brazilian Journal of Political Economy*, 38(2): 219-236.
- Hartmann, D. (2014). *Economic Complexity and Human Development*. New York: Routledge.
- Hartmann, D., Guevara, M.R., Jara-Figueroa, C., Aristaran, M., & Hidalgo, C.A. (2017). Linking economic complexity, institutions and income inequality. *World Development*, 93: 75-93.
- Hausmann, R., Hidalgo, C.A., Bustos, S., Coscia, M., Chung, S., Jimenez, J., Simoes, A., & Yildirim, M.A. (2011). The atlas of economic complexity mapping paths to prosperity.
- Hidalgo, C. A. (2009). The dynamics of economic complexity and the product space over a 42 year period. *Center for International Development at Harvard University Working Paper* 189.

Hidalgo, C. A., & Hausmann, R. (2009). The Building Blocks of Economic Complexity. *PNAS*, 106 (26): 10570-10575.

Lapatinas, A. (2016). Economic complexity and human development: A note. *Economics Bulletin*, 36(3): 1441-1452.

Pan, C.I., Chang, T., & Wolde-Rufael, Y. (2015). Military spending and economic growth in the Middle East countries: Bootstrap panel causality test. *Defence and Peace Economics*, 26(24): 443-456.

Pesaran, M. H. (2004). General diagnostic tests for cross section dependence in panels. *CWPE*, 0435.

Pesaran, M. H. (2007). A simple panel unit root test in the presence of cross-section dependence. *Journal of Applied Econometrics*, 22: 265-312.

Stojkoski, V., & Kocarev, L. (2017). The relationship between growth and economic complexity: Evidence from Southeastern and Central Europe. *MPRA*, 77837.

Şak, N. (2015). *Panel Eşbütünleşme Analizi*. In *Stata ile Panel Veri Modelleri*. Ed.by Burak Güriş, İstanbul: Der Yayınları.

UN. (2019, March 3). Country Classification. Retrieved from https://www.un.org/en/development/desa/policy/wesp/wesp_current/2014wesp_country_classification.

UNDP. (1990). *Human Development Report 1990*, New York: Oxford University Press.

Yerdelen Tatoğlu, F. (2013). *İleri Panel Veri Analizi Stata Uygulamalı*. (2. b.). İstanbul: Beta.

THE IMPACT OF POWER AND RELATIONSHIP QUALITY ON VALUE CREATION AND APPROPRIATION IN BUYER-SUPPLIER RELATIONSHIPS: THE CASE OF MOROCCAN COMPANIES

DOI: 10.17261/Pressacademia.2019.1130

JMML-V.6-ISS.3-2019(5)-p.175-196

Mdarhri Alaoui Saad¹, Amine Nouredine²

¹ Abdelmalek Assaadi University, National School of Trade and Management of Tangier, Morocco.

saadinho7@hotmail.com; ORCID: 0000-0002-2119-7784

² Abdelmalek Assaadi University, National School of Trade and Management of Tangier, Morocco.

noureddineamine@yahoo.fr ORCID: 0000-0002-8045-8374

Date Received: June 11, 2019

Date Accepted: September 24, 2019

To cite this document

Saad, M., A., Nouredine, A., (2019). The impact of power and relationship quality on value creation and appropriation in buyer-supplier relationships: the case of Moroccan companies. *Journal of Management, Marketing and Logistics (JMML)*, V.6(3), p.175-196

Permalink to this document: <http://doi.org/10.17261/Pressacademia.2019.1130>

Copyright: Published by PressAcademia and limited licenced re-use rights only.

ABSTRACT

Purpose- This study aims to examine the influence of relationship quality and power on value creation and appropriation and ultimately, on satisfaction and relationship continuity. Based on the theory of social exchange, this study proposes a conceptual model, which positions value creation and appropriation as central variables in the nomological network of business relationships.

Methodology- A quantitative study of 174 suppliers was carried out in order to compare the theoretical model with the empirical reality.

Findings- The results obtained show that the relationship quality promotes greater value creation and appropriation in ongoing business relationships. As for power, its influence differs depending on how it is exercised within the relationship. Moreover, the appropriation of value remains the main driver of partner satisfaction, a sine qua non condition for the continuity of the relationship.

Conclusion- This research contributes to a better understanding of value creation-appropriation in ongoing business relationships. By strategically managing their customer-supplier relationships, managers can create and capture greater value and gain a competitive advantage.

Keywords: Value creation, value appropriation, relationship quality, power, relational satisfaction, relationship continuity.

JEL Codes: M31, L10

1. INTRODUCTION

Managing business relationships continues to be a challenge for many firms, even though they have become increasingly common in contemporary business practices. Inter-firm relationships, seen as a key source of value creation and appropriation, have become the subject of increasing attention from researchers and practitioners. Thus, the notion of "value" is at the core of business relationships and is a critical element in their success. This is reflected in considerable academic literature (Lindgreen and Wynstra 2005; Lindgreen et al., 2012). However, the concept of "value" still suffers from a multitude of competing theoretical perspectives and foundations, creating a certain ambiguity and making it even more difficult to understand (Sandberg et al., 2018; Francis et al., 2014). In addition, the two central issues in value research, namely value creation and value capture, are addressed separately by the authors (Cherni and Leroux, 2015), leaving the interaction between the two concepts relatively ignored (Wanger et al, 2010, Mizik and Jacobson, 2003; Ellegaard et al., 2014).

Over the past two decades, the paradigm shift in marketing to relationships has resulted in increased research on the quality of relationships and the increased importance of satisfied business relationships (Athanasopoulou, 2006). In particular, researchers' attention has focused on relationship quality as a prerequisite for successful business relationships (Athanasopoulou, 2009; Liu et al, 2010). However, the presence of power asymmetry in such relationships can be counterproductive, as it can encourage opportunism or allow excessive appropriation of the value created in the relationship (Nyaga et al., 2013). Several researchers argue that power asymmetry in business relationships is an important area for research, because differences in power between the two partners are generally unavoidable (Nyaga et al., 2013, Brito and Miguel, 2016).

It is clear from the above discussion that business relationships create value for both dyadic partners. However, this tells us little about how this total value created is shared between the two actors. Some researchers have argued that even if a collaborative or partnership relationship results in the creation of greater value than an arm's length relationship, this does not necessarily mean that the value created will be shared equitably between the two partners (Cox et al., 2004; Chicksand and Rehme, 2018). The literature suggests that companies will seek to capture as much value as possible through the relationship (Mizik and Jacobson, 2003, Crook and Combs, 2007).

Despite the existence of several perspectives, we argue that understanding the power dynamics between customers and suppliers is essential to explain how the total value created is shared in the supply chain. Indeed, the amount of value that each partner manages to capture is a function of their relative power in the relationship, which has further implications in satisfaction and relationship continuity, but that has not been thoroughly explored in the literature (Brito and Miguel, 2016; Crook and Combs, 2007).

As the relationship quality and the use of power affect the relationship experience, and value distribution influences the perception of satisfaction and the expectations of relationship continuity, it is important to investigate the interaction of these concepts.

From there, our research is guided by the following main issue:

To what extent does relationship quality and power influence value creation and appropriation by the dyadic partners and, ultimately, satisfaction and relationship continuity?

More specifically, this research attempts to answer several questions that have been little explored by previous research:

What is the impact of relational variables and power bases on value creation and appropriation?

What is the nature of the links between value creation and value appropriation?

What is the impact of the interaction between value creation and value appropriation on relational satisfaction and relationship continuity?

To shed light on the creation and appropriation of value in business relationships, this paper adopts the following structure: The first section presents the theory of social exchange as a theoretical framework. The second section is devoted to literature analysis and hypothesis development. The research methodology of the empirical study is detailed in the third section, followed by a discussion of the results. Finally, the managerial implications as well as the possibilities for future research are presented in the last section.

2. THEORETICAL FRAMEWORK: SOCIAL EXCHANGE THEORY

Social exchange theory (SET) has been widely used by marketers to explain business-to-business relational exchange. Any interaction between actors (individuals or organizations) is an exchange of resources (Homans, 1958). Seminal research that has contributed to the development of SET includes research by sociologists Blau (1955, 1960, 1964), Emerson (1962), Homans (1958) and psychosociologists such as Thibaut and Kelley (1959). Homans (1958), developed the first systematic theory that focuses on social behaviour as an "exchange". However, Blau (1964), may have been the first to use the term "social exchange theory" to describe his conceptualization of "social interaction as an exchange process" (Chadwick-Jones 1976). Thibaut and Kelley (1959) are also often cited as important contributors to SET, because of their concepts of: level of comparison (CL) and level of comparison of alternatives (CLalt), which are used to explain how the parties in the exchange relationship weigh the benefits of the exchange relationship to determine their relational engagement. Emerson's (1962) main contribution to SET is his research on the effects of power and dependence on exchange relationships. He theorizes that power imbalances make relationships unstable and that, therefore, interdependence is crucial to maintaining a social exchange relationship (Lambe et al., 2001).

SET consists of four fundamental premises, namely: (1) exchange interactions result in economic and/or social outcomes; (2) these outcomes are compared over time with other exchange alternatives to determine dependence on the exchange relationship; (3) positive outcomes increase over time companies' trust in their business partners and their commitment to the exchange relationship; and (4) positive exchange interactions over time produce relational exchange standards that govern the exchange relationship.

SET considers exchange as social behaviour that can lead to economic and social outcomes. Organizations form new associations and maintain old ones because they expect a gratification (Homans 1958; Thibaut and Kelley 1959; Blau 1964). Although economic rewards such as money are important, social rewards such as satisfaction are often also valued. Similarly, an exchange relationship involves associated costs. SET suggests that the parties will remain in the relationship as long as satisfactory rewards continue (Homans, 1958; Blau, 1968). Independently of how the two types of results are weighted,

economic and social results are judged together and compared to certain alternatives (Homans 1958; Thibaut and Kelley 1959; Blau 1964).

In this study, social exchange theory makes it possible to develop hypotheses on the interaction between the creation and appropriation of value and its impact on satisfaction and relationship continuity. The following section presents the conceptual model, and the development of hypotheses.

3. HYPOTHESIS DEVELOPMENT AND CONCEPTUAL MODEL

3.1. Relationship Quality (RQ)

Interest in developing and maintaining successful business relationships has increased in recent years (Jap, 2001). Indeed, the nature of the relationship between the two partners plays an important role in the success of a long-term exchange relationship, and determines the probability that transactions between the partners will continue (Liu et al., 2010). In particular, it has been proved that relationship quality has a positive impact on performance and relational benefits that flow from it (Athanasopoulou, 2009). Although previous research has discussed and tested the concept in various research contexts, the definition and operationalization of relationship quality differs from one research project to another (Henneberg et al., 2016). Nevertheless, the authors agree that the concept of relationship quality is a multidimensional construct with variable content, a higher order concept consisting of several distinct but related components or dimensions, often operationalized in a monadic way (Henneberg et al., 2016). Thus, relationship quality represents the overall relationship in an abstract way, rather than as specific dimensions of the relationship (e.g., trust or engagement) (Nyaga and Whipple, 2011; Nyaga et al., 2013). Although the literature on the dimensions of RQ has not been unanimous (Athanasopoulou, 2009), researchers agree that trust, commitment and communication are key dimensions of RQ (Liu et al., 2010, Nyaga et al., 2013; Henneberg et al., 2016). Therefore, this study focuses on trust, commitment and communication as key components of RQ.

Trust refers to the extent to which both partners perceive each other as credible and benevolent (Ganesan, 1994; Doney and Cannon, 1997). Trust is the impetus for value creation in exchange relationships (Chen et al., 2017). It has a positive impact on the value generated by the relationship mainly through improved benefits and reduced costs (Wathne and Heide, 2000). Commitment reflects a lasting desire to continue a valuable business relationship, accompanied by a willingness to make the necessary efforts to maintain it (Morgan and Hunt, 1994; Ganesan, 1994). Commitment is an important element of social exchange, as it ensures that partners will make the necessary efforts and investments to produce mutually desirable results (Dwyer et al., 1987, Ganesan, 1994). In this way, commitment promotes successful relationships, increased satisfaction and mutual benefits (Morgan and Hunt, 1994). Finally, communication refers to the formal and informal sharing of useful and relevant information between companies (Anderson and Narus, 1990). It allows both partners to improve their efficiency, responsiveness and flexibility (Abbad, 2008), in order to promote better value creation. Open and frequent communication between the two partners makes it possible to develop a congruence in perceptions and expectations regarding the relationship and also to minimize uncertainty, which will improve exchange and generate more value (Nyaga et al., 2013, Palmatier, 2008). When considered together, the three elements (trust, commitment and communication) clearly reflect the overall relationship quality in customer-supplier exchanges. Consequently, relationship quality is expected to positively influence value creation by the exchange partners. Several previous studies have demonstrated that the emergence of a relationship quality between the two parties provides the appropriate conditions for superior and sustainable value creation (Dyer and Singh, 1998; Kale et al., 2000; Palmatier, 2008; Wagner and Lindemann, 2008; Kang, 2013). Hence the following hypothesis:

H 1: relationship quality is positively associated with value creation.

3.2. Coercive Power

Coercive power is based on the perception of a party, in a business relationship, that the partner has the capacity to punish him if his demands are not met (Lacoste and Blois, 2015). These sanctions may include, for example, imposing financial penalties, suspending significant support, or threatening to withdraw from initial promises (Goodman and Dion, 2001). The exercise of this form of power reflects negative and aggressive behaviour, which essentially forces the other party in the relationship to do things that they would not otherwise have done (Frazier and Rody, 1991).

This involuntary commitment is most likely to lead to dissent, resentment, conflict, dissatisfaction, underperformance and refusal to participate (Benton and Maloni 2005, Jonsson and Zineldin 2003). Indeed, the use of coercive power can be considered as a form of opportunism, because the party who exerts pressure often expects to profit from it to the detriment of the weakest company (Nyaga et al., 2013). This situation is more likely to lead to higher monitoring costs and to intensify disagreements between the two partners (Leonidou et al., 2008, Bandara et al., 2017), thus limiting value creation.

For McDonald (1999), coercive power in a relationship is a serious barrier to effective collaboration. Indeed, the coercive exercise of power hinders the dyad's attempts to establish effective and successful collaborative relationships (Bandara et

al., 2017). Johnson et al. (1993), argue that coercive use of power leads to a decrease in value creation in the relationship, mainly due to economic sanctions imposed and negative psychological pressure felt (Leonidou et al., 2008). Thus, the use of this source of power will increase perceived costs (both economic and social) to a level that may exceed the respective benefits derived from the relationship and thus reduce value creation (Leonidou et al., 2008; Nyaga et al., 2013). Previous studies have confirmed the negative relationship between coercive power and dyad outcomes, including cooperative relationships (Ferrer et al., 2010), adaptive and collaborative behaviours (Nyaga et al., 2013) and relationship success (Bandara et al., 2017). Therefore, we assume the following:

H 2: Coercive power is negatively associated with value creation.

3.3. Non-coercive Power

Reciprocally to coercive power, non-coercive power does not include aggressive or competitive actions that will produce friction in the relationship. On the contrary, it actively inspires the interacting parties to work together for their common interests. As a result, conflict in the relationship will be reduced, while any form of disagreement will be functional rather than dysfunctional. Indeed, the use of non-coercive power helps to increase financial and social benefits, for example by providing financial rewards, assistance and/or access to specialized information (Wilkinson, 1979). All these elements will contribute to promoting shared objectives and common interests (Leonidou et al., 2008), thus contributing to the creation of greater value. Gelderman et al. (2008) note that non-coercive strategies are intended to change the partner's attitude and that these strategies have a positive impact on the relationship. As Belaya et al. argues, (2009), non-coercive power can be used as "an effective tool to coordinate and promote harmonious relationships, resolve conflicts and, consequently, improve the performance of the entire supply chain network". In other words, non-coercive power is an impetus for teamwork, improved supply chain relationships and superior performance (Arend and Wisner, 2005). In this perspective, the sources of non-coercive power tend to increase the value generated by the relationship for both members by increasing the level of cooperation (Jonsson and Zineldin, 2003). Many previous studies have shown that when power is not abused or coercively used, there is an overall improvement in relationships (Crook and Combs, 2007; Frazier and Summers, 1986; Jonsson and Zineldin, 2003; Maloni and Benton, 2000; 2005; Nyaga et al., 2013; Bandara et al., 2017). Hence the following is hypothesized:

H 3: Non-coercive power is positively associated with value creation.

3.4. Value Creation and Value Appropriation

The creation of value and the maximization of its ownership have long been recognized as the main goals of organizations (Anderson, 1995) and the source of competitive advantage (Coff, 1999). From a conceptual point of view, value creation and value appropriation represent two sides of the same coin. Value creation involves the total net value (i.e. total benefits minus total sacrifices) created as part of a business relationship between the two exchange partners. Value appropriation represents the net value that a member of the dyad successfully claims (Wagner et al., 2010).

From the perspective of institutional arrangements, companies that engage in value-creating institutional relationships do so only with the objective of capturing a portion of the value created, so that maximizing value creation must be aligned with maximizing its appropriation for each of the participating companies. Indeed, value creation and value appropriation represent two closely linked perspectives of value. Value creation is a prerequisite for value appropriation, while value appropriation is the purpose of value creation (Zhao et al, 2014; Carson et al., 1999). According to Wagner et al (2010), value creation improves value appropriation for both members of the relationship. The more successful the relationship is in terms of value creation, the more value each company can claim (win-win situation). Thus, by increasing the total value created in a relationship, the value captured by each party can increase (Miguel et al., 2014; Tescari and Brito, 2016; Yan and Wagner, 2017; Fang et al., 2008). Therefore, we assume the following hypothesis:

H 4: Value creation is positively associated with value appropriation.

3.5. Value Appropriation, Relational Satisfaction and Relationship Continuity

The current literature on supply chain management assumes that mutually beneficial relationships lead to partner satisfaction (Meloni and Benton, 2005), as well as stability and continuity of the relationship. Satisfaction is an important factor in building long-term relationships and plays a key role in determining their future. Similarly, without satisfaction, both partners are unable to generate the psychological factors and goodwill necessary to maintain the relationship (Meloni and Benton, 2005).

Value appropriation can have direct and indirect effects on relationship continuity. The indirect impact is simple: value appropriation has a positive impact on partner satisfaction, which promotes stability and continuity of the relationship. Indeed, the greater the value that a company can obtain from a relationship, the more likely the perceived outcomes are considered to be above previous expectations (CL) and the fewer better alternatives are available on the market (CLalt), which results in more satisfaction with the current relationship (Thibaut and Kelley 1959). According to Kumar et al, (1995), a

significant portion of the value for dyad members increases satisfaction with the relationship. The same conclusion was supported by Deligonul et al (2006) and Wagner and Lindemann (2008).

Moreover, relational satisfaction is a sign of relationship continuity of the in time. Its degradation makes the relationship difficult to manage and questions its maintenance and longevity (Meloni and Benton, 2005). In fact, satisfaction is widely accepted by researchers as a strong predictor for behavioral outcomes such as intentions to pursue and develop the relationship. Thus, the academic literature attests that satisfaction increases cooperation between partners, reduces conflict as well as propensity to leave the relationship (Ulaga and Eggert, 2006). Partners' satisfaction with the results achieved influences the future of the relationship. Because current experiences are expected to reoccur in future relationships, companies will only continue their relationships if their current results meet their expectations (Wagner et al., 2010). Therefore, we make the following two assumptions:

H 5: Value appropriation is positively associated with relational satisfaction.

H 6: Relational satisfaction is positively associated with relationship continuity.

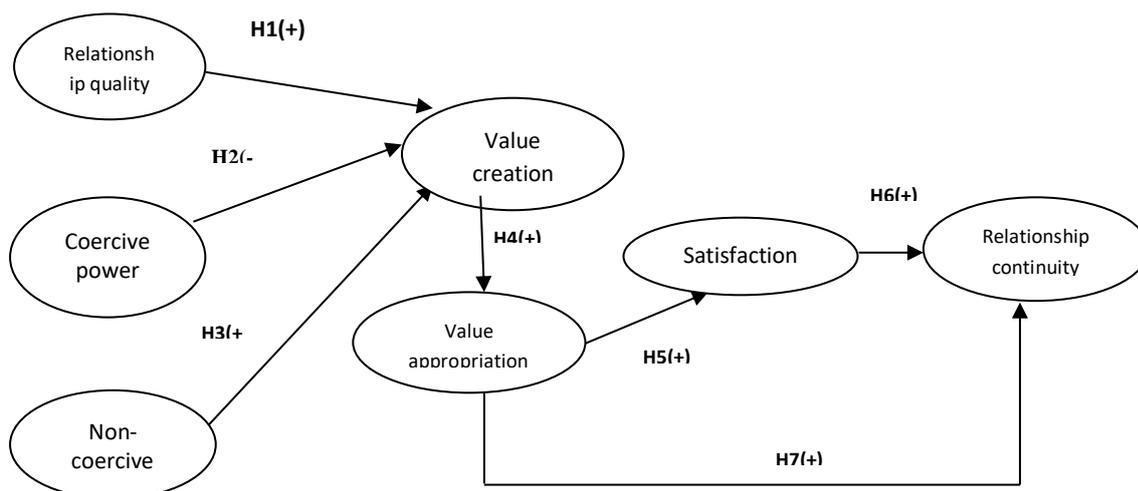
The basic assumptions of social exchange theory suggest the direct effect of value appropriation on partners' intentions to pursue the relationship. Indeed, at the business relationship level, inter-firm interactions are often based on expected rewards (Blau, 1964; Emerson, 1976). Thus, companies estimate the expected value of a relationship and, on this basis, adjust their behavior and actions towards their partner and the relationship. If the perceived value is greater than or equal to expectations, companies are motivated to engage in new transactions and allocate more effort and resources to continue the relationship. Conversely, if results are below expectations, partners may leave the relationship (Griffith et al., 2006, Nyaga et al., 2013). In other words, the higher the value expected or received from a business relationship, the greater the partners' motivation to continue the exchange process (Ulaga and Eggert, 2006), therefore, we hypothesize that:

H 7: value appropriation is positively associated with relationship continuity.

This study also argues that relational satisfaction mediates the relation between value appropriation and intentions of relationship continuity. According to the theory of reasoned action, cognitive variables are mediated by affective variables to produce connotative results (Fishbein and Ajzen, 1977). Ulaga and Eggert (2006), in their research, empirically tested how cognitive perceptions of the value derived from the relationship interact with affective feelings of satisfaction, ultimately leading to behavioural intentions to maintain and intensify a business relationship. According to these authors, value appropriation has a direct impact on the partners' intention to pursue and develop their relationship, as well as an indirect impact that is mediated by the construction of relational satisfaction. Hence the following hypothesis:

H 8: Relational satisfaction mediates the relationship between value appropriation and relationship continuity.

Figure 1: Illustrates the Conceptual Model and Proposed Assumptions



4. METHODOLOGY

The data were collected from a sample of Moroccan suppliers (operating in various sectors) through an online survey. Indeed, this study focuses on the supplier perspective because customers are generally more powerful partners in the relationship (for several reasons related to size, dependence and intensity of competition). The sampling frame included about 1000

companies operating in business markets in Morocco. It contained e-mail addresses as well as telephone numbers. Respondents were contacted mainly by email, containing a personalized link to the questionnaire. A total of 178 responses were received, representing a response rate of 17.8%. After verification, 174 responses were found to be valid and complete. Respondents held positions of responsibility in their companies. The majority of them were senior managers with a global vision of the supply chain, as well as a perfect knowledge of their company's customers' activities and customer relationships. These target persons were mainly directors in the case of a small or medium-sized company, or commercial or logistics managers in the case of a large company. Respondents were asked to consider a unique relationship in which they were directly involved. The instructions explained that questions should be answered with reference to the main customer.

Non-response bias was estimated by comparing early and late respondents. For all model items examined, there was no statistically significant difference (Armstrong and Overton, 1977).

To measure the theoretical constructs of our model, we have adopted measurement scales already used in previous studies. These have been adapted to suit the research context. In addition, since all the measurement scales are based on Anglo-Saxon research, it was necessary to translate them. We carried out this translation, using the technique of "back translation". The translation was from English into French, which remains the language used by companies and their executives in the Moroccan professional context. We used a five-step Likert scale, as it is easier to use and shorter to answer.

We have operationalized relationship quality as a second-order construct, composed of trust, commitment and communication as first-order factors. The trust measure was based on the items developed by Doney and Cannon's (1997). The commitment scale is based on the items developed by Morgan and Hunt, (1994). The measure of communication used six items developed by Krause and Ellram (1997).

With regard to power (both coercive and non-coercive), this study adopts the measurement items developed by Leonidou et al (2008).

To measure value creation and value appropriation, we adopted the measure elaborated by Wagner et al. (2010) and based on the global measurement of equity (Scheer et al., 2003). The measure of relational satisfaction used the items developed by Crosby et al (1990), while the items developed by Kumar et al (1995) were used to measure intentions of relationship continuity ((see appendix 1).

5. ANALYSIS AND RESULTS

Data analysis was based on the structural equation modelling method under the PLS approach (Partial Least Squares) using SMART PLS 3 software (Ringle, Wende and Becker, 2015). This approach maximizes the variance explained by the independent variables of the dependent variables. It differs from structural equation modelling based on covariance and maximum likelihood (CB-SEM), which seeks to reproduce the theoretical matrix of covariances (Hair et al., 2017). In addition, the PLS approach is particularly appropriate for exploratory and predictive studies, in which the researcher seeks to estimate a complex model through a relatively small sample (Hair et al., 2017), as was the case for this study. It is also less demanding in its conditions of use (no data normality, few probabilistic assumptions at the outset) and allows for simple and direct data modelling (Sosik et al., 2009; Lacroux, 2009).

This study followed standard evaluation guidelines for reporting PLS-SEM results (Hair et al., 2017). The analysis involved a two-step approach: 1) validate the measurement model (or external model) and 2) estimate the structural model (or internal model) (Hair et al., 2017).

5.1. Analysis of Reflective Measurement Models

First, we purified our data using the SPSS software by performing an exploratory factor analysis (EFA) for each of our latent variables to ensure their unidimensionality. Purification was done by eliminating items with factor contributions of less than 0.5 on the main components (Chandon, 2007). Secondly, it was necessary to ensure the reliability of the constructs, through the Cronbach alpha test, which must be greater than 0.6 (Nunnally, 1978). In order to evaluate the measurement model in PLS-SEM, we used several indices: individual indicator reliability, construct reliability, convergent validity and discriminant validity.

The reliability of each indicator depends on examining the standardized factor loadings. Reliability is considered acceptable when an indicator has a standardized factor loading of ≥ 0.70 on its respective construct (Fornell & Larcker, 1981). Table 1 shows the standardized factor loadings for all first-order reflective constructs.

Table 1: Measurement Model Results

Construct name / items	Factor loading	Cronbach Alpha	Composite reliability	AVE
Trust		0.887	0.912	0.596
TRUST1	0.793			
TRUST2	0.725			
TRUST3	0.765			
TRUST4	0.728			
TRUST5	0.803			
TRUST6	0.794			
TRUST7	0.791			
Commitment		0.886	0.917	0.689
COMMIT1	0.828			
COMMIT2	0.857			
COMMIT3	0.868			
COMMIT4	0.756			
COMMIT6	0.838			
Communication		0.865	0.903	0.653
COMM2	0.700			
COMM3	0.770			
COMM4	0.875			
COMM5	0.799			
COMM6	0.883			
Relationship quality		-	0.893	0.857
TRUST	0.846			
COMMITMENT	0.868			
COMMUNICATION	0.859			
Coercive power		0.867	0.903	0.652
CPW1	0.788			
CPW2	0.888			
CPW3	0.815			
CPW4	0.761			
CPW5	0.778			
Non-coercive power		0.739	0.848	0.650
NCPW1	0.780			
NCPW3	0.829			
NCPW4	0.808			
Value creation		0.948	0.975	0.950
VALUE1	0.975			
VALUE2	0.975			
Value appropriation		0.915	0.959	0.921
VAL SUPL1	0.959			
VAL SUPL2	0.961			
Satisfaction		0.914	0.946	0.853
SATISFAC1	0.898			
SATISFAC2	0.951			
SATISFAC3	0.921			
Relationship continuity		0.826	0.896	0.741
CONTIN1	0.878			
CONTIN2	0.849			
CONTIN3	0.856			

Second, the reliability of all reflective constructs was assessed by analyzing two types of indicators: Cronbach's alpha, and composite reliability. The recommended value is ≥ 0.70 for all two types of reliability. The values of Cronbach's alpha, and composite reliability exceeded 0.70, confirming the convergence or internal consistency of all first-order constructs (Table 1)

Third, convergent validity is assessed through the average variance extracted (AVE) which must have a value ≥ 0.5 to demonstrate that it is able to explain more than half of the variance of these indicators. In accordance with this recommendation, all variables had AVE values greater than 0.5 (see table 1).

Fourth, we assessed discriminating validity through two approaches: Cross-loading and correlations between constructs (Fornell and Larcker criterion). For the first approach, the factor loadings of all items attached to a construct must be greater than their cross-loadings (i.e., their correlation) with other constructs (see appendix 2). As per the Fornell and Larcker (1981) criterion, the variance shared by a construct with its indicators, measured by the square root of the AVE, must be greater than the variance shared between latent constructs, measured by the correlations between constructs (see table 2). The results obtained confirm the discriminating validity of all our variables.

Table 2. Discriminant validity

	Value appropriation	Communication	Trust	Relationship continuity	Value creation	Commitment	Coercive power	Non-coercive power	Satisfaction	RQ
Value appropriation	0.960									
Communication	0.312	0.808								
Trust	0.363	0.560	0.772							
Relationship continuity	0.447	0.375	0.377	0.860						
Value creation	0.866	0.329	0.394	0.511	0.975					
Commitment	0.264	0.695	0.561	0.499	0.322	0.830				
Coercive power	-0.252	-0.139	-0.326	-0.363	-0.313	-0.149	0.808			
Non-coercive power	0.209	0.112	0.197	0.164	0.235	0.103	0.043	0.808		
Satisfaction	0.504	0.367	0.543	0.568	0.514	0.396	-0.302	0.297	0.924	
Relationship quality	0.368	0.861	0.845	0.485	0.410	0.868	-0.248	0.164	0.516	0.926

a. Evaluation of the Second Order Variable

To confirm that relationship quality is a higher-order construct, with a second-order factor represented reflectively by three first-order factors, an exploratory factorial analysis using Principal Axis Factoring with an oblique rotation (direct Oblimin) was first performed. Relationship quality was found to be a higher order latent variable represented by three dimensions, in line with the conceptualization adopted and recommended in the literature. 17 of the 19 items had loadings above the minimum threshold (0.5) within each dimension. Also, each of the three first-order factors had Cronbach values above the recommended lower limit of 0.6 (Nunnally & Bernstein, 1994) (see Table 1).

Repeated Measures Approach: For PLS-SEM, the validity of higher-order latent constructs (known as hierarchical component models) can be assessed using the repeated measurement approach. First, all indicators are assigned to their respective dimensions reflectively. Then, all indicators are reassigned a second time to the second-order construct reflectively. Finally, the relationship between the second-order construct and its dimensions is specified as reflexive (Hair et al., 2014; 2018; Becker et al., 2012).

The assessment of the reliability and convergent validity of the scale of the latent variable "relationship quality" will follow the following steps: First, and for each of the three dimensions, we will evaluate the factor loadings of the indicators, the average variance extracted (AVE), the composite reliability (CR), the Cronbach alpha index (α) and the discriminant validity. Then, once we have ensured validity and reliability of each dimension, we will proceed to estimate the psychometric quality of our second-order variable using the same criteria (validity and reliability). Finally, to demonstrate the relevance and fit of the relationship quality measurement model, we must establish that the relationships between the second-order construct and its dimensions are strong and significant ($p < 0.05$) and the coefficient of determination (R^2) of each dimension is greater than 0.5, indicating that the second-order variable explains more than 50% of the variance in its dimensions (Hair et al, 2014).

Examination of the various tests revealed that all conditions required to ensure the reliability as well as the convergent and discriminating validity of the latent variable relationship quality and its three dimensions are met (see table 1 and appendix 2). As shown in the table above, the relationships between the second-order construct of relationship quality and its dimensions are all strong and significant. Similarly, all R^2 values are greater than 0.5. Therefore, the results of the confirmatory factor analysis and the significance of the path coefficients support relationship quality as a higher order latent construct represented reflectively by three dimensions (Trust, Commitment and Communication).

Table 3: Assessment of the Relationship Quality Measurement Model

	Original Sample	Sample Mean	Standard Deviation	T Statistics	R ²
Relationship quality -> Trust	0.846	0.846	0.025	33.884	0.715
Relationship quality -> Commitment	0.868	0.868	0.024	35.621	0.753
Relationship quality -> Communication	0.859	0.859	0.027	32.124	0.739

5.2. Evaluation of the Structural Model

This study applies the standard guidelines in Hair et al (2017) for the evaluation of the structural model. First, the structural model was checked for collinearity between the variables. To do this, we examined the variance inflation factor (VIF) value for all independent constructs.

Table 4: Estimation of the Collinearity between Structural Model Constructs

	Value appropriation	Relationship continuity	Value creation	Satisfaction
Value appropriation				1.000
Relationship continuity				
Value creation	1.334			
Coercive power	1.154	1.143	1.077	
Non-coercive power	1.085	1.124	1.036	
Relationship quality	1.241	1.385	1.107	
Satisfaction		1.547		

As shown in the table 4, all VIF values are below the critical threshold of 5 (Hair et al., 2017), confirming that colinearity between structural model variables is not a critical issue for the rest of the analysis.

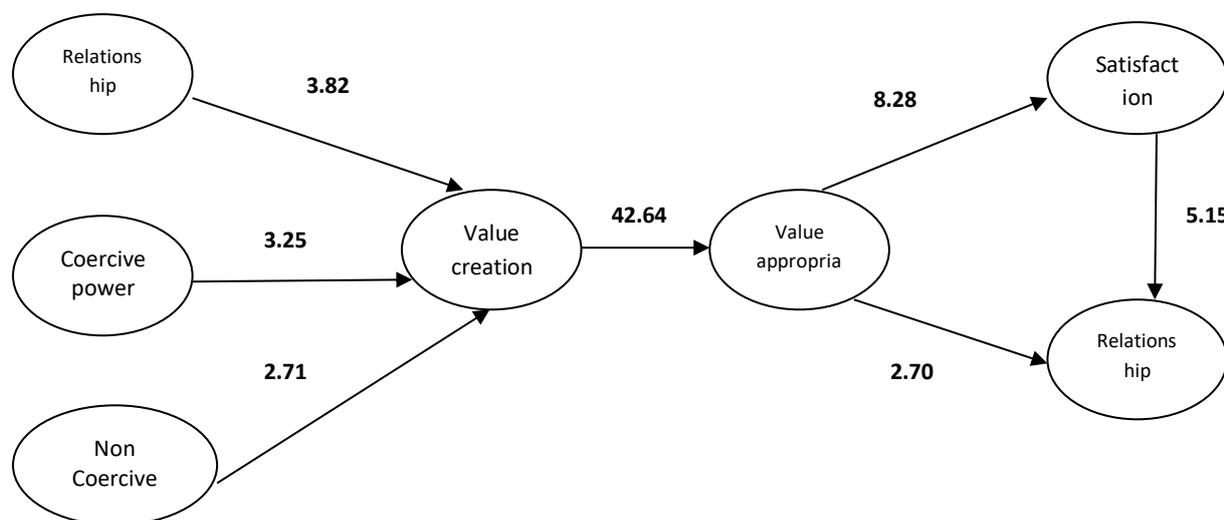
Then, the structural model was evaluated using the coefficients of determination (R^2) and the cross-validated redundancy coefficients (Q^2) to assess the predictive relevance of its latent variables, (i.e. their nomological validity). According to Hair et al., 2017, the coefficients of determination (R^2) must be greater than 0.25 for the model to be significant. The table 5 shows that all the coefficients of determination (R^2) have a value greater than 0.25, which proves that the structural model has a satisfactory predictive power in the sample (Hair et al., 2014; 2017). This result is also supported by the redundancy coefficients values (Q^2). Indeed, all Q^2 values are significantly greater than zero, which confirms the predictive relevance of the model in terms of out-of-sample prediction (Hair et al., 2014; 2017).

Table 5: Predictive Validity of the Structural Model

Variable	R ²	Signification	Q ²
Value appropriation	0.751	Elevée	0.645
Relationship continuity	0.404	Modérée	0.263
Value creation	0.251	Faible	0.227
Satisfaction	0.254	Faible	0.200

Next, the sizes and significance of the path coefficients that reflect the hypotheses were examined. The significance of the path coefficients was calculated using the bootstrapping procedure (with 5000 bootstrap samples and 174 bootstrap cases).

Figure 2: Results of Structural Model



In addition to assessing the importance and significance of the structural path coefficients obtained, the magnitude of the effects size f^2 and q^2 should also be examined.

The effect size f^2 allows assessing an exogenous construct's contribution to an endogenous latent variable's R^2 value. For its part, the effect size q^2 makes it possible to assess the contribution of an exogenous latent variable to the prediction of an endogenous latent variable. Its two indicators should be ≥ 0.02 (Hair et al.,2017).

The table 6 summarizes hypothesis testing results as well as f^2 and q^2 values.

Table 6: Estimation Result of the Structural Model

Hypot he sis	Structural relationship	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	Decision	95% confidence intervals		f^2	q^2
								Lower bound	Upper bound		
H1	Relationship quality -> Value creation	0.318	0.313	0.085	3.759*	0.000	Supported	0.177	0.456	0.123	0,105
H2	Coercive power -> Value creation	-0.243	-0.248	0.077	3.159*	0.001	Supported	-0.368	-0.117	0.073	0,060
H3	Non-coercive power -> Value creation	0.193	0.202	0.071	2.740*	0.003	Supported	0.086	0.313	0.048	0,038
H4	Value creation -> Value appropriation	0.866	0.866	0.020	42.557*	0.000	Supported	0.832	0.898	3.003	-
H5	Value appropriation -> Satisfaction	0.504	0.506	0.062	8.130*	0.000	Supported	0.400	0.603	0.340	-
H6	Satisfaction -> Relationship continuity	0.460	0.466	0.089	5.184*	0.000	Supported	0.316	0.611	0.246	0.134
H7	Value appropriation -> Relationship continuity	0.215	0.212	0.079	2.724*	0.003	Supported	0.084	0.343	0.054	0,022

*: Significant at the 1% level (one-sided test).

Analysis of the path coefficients and levels of significance shows that all hypothesized direct relationships were empirically supported. The empirical results show that relationship quality as well as non-coercive power were positively and significantly related to value creation, supporting H1 and H3 (table 6). Moreover, and as assumed, the relationship between coercive power and value creation was negative and significant, also supporting H2. Empirical results also show direct, significant and positive relationships between value creation and value appropriation, value appropriation and relational satisfaction, value appropriation and relationship continuity, as well as relational satisfaction and relationship continuity. Therefore, assumptions H4, H5, H6 and H7 are supported.

In addition, analysis of the effects size f^2 and q^2 for all significant structural relationships in the internal model reveals values greater than 0.02, suggesting satisfactory effects and acceptable predictive relevance for endogenous latent variables (Hair et al., 2017).

Mediation test- To test mediation, we adopted the two-step procedure developed by Zhao et al, (2011), and recommended by Hair et al, (2017) as part of the PLS approach. The first step concerns the significance of the indirect effect via the mediator variable. If the indirect effect is significant, we can conclude that there is a form of mediation. In order to determine its nature, the significance of the direct effect must be assessed (step 2). The results indicate that value appropriation indirectly influences relationship continuity through relational satisfaction (H8 is supported). As the direct effect was also significant, the results reveal that relational satisfaction partially mediates (indirect-only mediation) the relationship between value appropriation and relationship continuity (see table 6). To further support the type of partial mediation, we calculated the product of effects (direct and indirect). Since both the direct and indirect effects were positive, the sign of their product is also positive. Therefore, we conclude that this is a complementary mediation.

Table 7: Estimation Results of the Indirect Effect

Hypot he sis	Structural relationship	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	Decision	95% confidence intervals	
								Lower bound	Upper bound
H8	Value appropriation -> Satisfaction -> Relationship continuity	0.232	0.235	0.051	4.512*	0.000	Supported	0.155	0.324

*: Significant at the 1% level (one-sided test).

6. CONCLUSION

This research responds to the need to study the conditions as well as the way in which business relationships between customers and suppliers can contribute to the creation and appropriation of superior and sustainable value. First, this study confirms the positive effect of relationship quality on value creation. This finding is consistent with previous studies that indicate that relationship quality generally leads to positive outcomes (Wagner and Lindemann, 2008; Wagner et al., 2010; Alejandro et al., 2011; Chen et al., 2017). Indeed, the main objective of partners in a business relationship is to work together to create greater value, either by increasing benefits or reducing costs (Walter et al., 2003; Ulaga and Eggert, 2006). However, to create greater value, the members of the dyad must align and consult each other in a meaningful way, which is possible thanks to a high level of relationship quality. Indeed, relationship quality has been suggested by researchers as a fundamental condition for the stability of the business relationship and the creation of sustainable value (Dyer and Chu 2011; Chen et al., 2017). In addition, a stronger and quality relationship increases the parties' positive perceptions of its viability and success, which increases their motivation to make the necessary efforts to create more value (Wagner and Lindemann, 2008). This finding is in line with the strong willingness of companies to invest in quality relationships (Kumar et al., 1995).

Consistent with the findings of previous studies (Johnson et al., 1993, Gulati and Sytch, 2007, Leonido et al., 2008; Hausman and Johnston, 2010), which state that coercive power is generally destructive to business relationships, the results of this study show that in the Moroccan context, coercive power is negatively linked to value creation as perceived by suppliers. Indeed, the use of coercion can create a sense of exploitation in the target, which can lead to conflict (Johnson et al., 1990), dissatisfaction (Skinner et al., 1992), and therefore harming the future development of the relationship (Skinner et al., 1992; Liu et al., 2010). Such a situation would lead the exploited party to seek short-term benefits, creating opposing forces or conflicting goals in the collaborative process, further reducing relationship value (Billitteri et al., 2013, Chen et al., 2017).

The results of this study also confirm the positive effect of non-coercive power on value creation. Indeed, the use of non-coercive power contributes more to increasing value generated by the relationship for both partners, through improved benefits, reduced costs, strengthened relationships and better performance (Jonsson and Zineldin, 2003; Crook and Combs, 2007; Leonidou et al., 2008, Bendara et al., 2017).

The estimation of path coefficients supports the expected positive effect of value creation on value appropriation. This empirical evidence is consistent with the results of several studies, including those of Wagner et al., (2010), Zhao et al., (2014), Tescari and Brito, (2016) and Yan and Wagner, (2017) which argue that value creation is a prerequisite and indispensable for value appropriation: the greater the value created, the greater the share captured by the participants in the relationship. Value appropriation, in turn, is positively associated with both supplier satisfaction and their willingness to maintain the relationship. This result confirms the importance of value appropriation in the context of business relationships.

Indeed, suppliers' satisfaction with their main customer, as well as their intentions to pursue the relationship, are mainly affected by the value appropriation process. Any dysfunctional act in this process can lead to partner dissatisfaction, relationship instability or, at least, tensions even in the longest and most successful relationships (Ulaga and Eggert, 2006; Deligonul et al., 2006; Wagner et al., 2010).

The last relationship tested was the one that assumed a positive influence of relational satisfaction on relationship continuity. The hypothesis test revealed a significant influence, in accordance with the results of previous studies, for which relational satisfaction is an important factor in the establishment of long-term relationships and plays a key role in their continuity (Ulaga and Eggert, 2006, Meloni and Benton, 2005). Moreover, relational satisfaction was found to mediate partially the association between value appropriation and relationship continuity. Thus, the value derived from the relationship has a direct impact on the partners' intention to continue and develop their relationship, as well as an indirect impact that is mediated by the construction of relational satisfaction (Ulaga and Eggert, 2006).

Future studies can replicate and extend our conceptual model to explore other possible explanations for our results.

Value creation and value appropriation represent the reason for business relationships. However, empirical research on the interaction between these two concepts remains relatively rare. In the context of social exchange theory, this study contributes to a better understanding of the interaction between value creation and value appropriation and its impact on attitude and behavioural outcomes. More specifically, this research explores how relational variables as well as influence strategies impact creating and appropriating value and ultimately relational satisfaction and relationship continuity. This study makes it possible to make a number of important managerial contributions.

First, the results of this research highlight the need for managers to strategically manage their business relationships in a relational way in order to create and appropriate greater value. Good business relationships reduce conflicts and misunderstandings between supply chain partners and create an environment conducive to transactional efficiency, allowing them to generate and achieve superior and continuous returns (Dyer and Singh, 1998). Second, power is inevitable in any customer-supplier relationship. The results of this study are consistent with previous studies, which have found that coercive power is often destructive for relationships (Leonidou et al., 2008; Hausman and Johnson 2010; Bandara et al., 2017). Therefore, managers must avoid its use in their mainly collaborative relationships, as it can be counterproductive. Indeed, the use of coercion reduces the potential for value creation in the relationship, and may even lead to its rupture (Gulati and Sytch, 2007; Johnson et al., 1993).

Our results also show that non-coercive power can be used to improve value creation in particular and the relationship between the two partners as a whole. Then, our work allows managers to develop a thorough understanding of the two sources of value perception in business relationships and their interaction. This better understanding would allow managers, on the one hand, to protect themselves against the exploitation of partners, by appropriating a fair share of the value created and, on the other hand, to ensure that future opportunities for value creation will not be hindered by excessive appropriation of value on their part.

Finally, the results of this research will enable managers and business leaders to become aware that the development of a positive satisfaction and attitude towards relationship value leads to a stronger relationship with their partners. Executives will thus be able to use the results of our study to recognize that the main driver of future collaborative intent is relational satisfaction, which underscores the importance of effectively managing the value creation and value appropriation processes to ensure the stability and continuity of business relationships.

7. LIMITATIONS

The first limitation of this work relates to the relatively small sample size compared to the total population of companies in Morocco. Indeed, the small sample size was put forward as one of the arguments in favour of using the partial least squares (PLS) method. To this end, it would be appropriate to test our causal model with a larger number of observations and using the maximum likelihood method (LISREL) in order to validate the results obtained. The second limitation of this study concerns the adoption of the supplier's perspective alone to assess the business relationship. A dyadic approach, including the views of both partners, would lead to richer results, while allowing to compare the perceptions of the two actors within the dyad. Another potential limitation is the existence of respondent bias, which can occur when a single respondent is asked

to assess both the nature of the relationship and its performance. By limiting the study to a single client chosen by the respondent, the approach introduces bias into the results, as respondents adopt different criteria to select the relationship in question (Fynes et al., 2005). Finally, a final limitation comes from our multi-sector survey field. Since the distribution of sectors of activity is unequal, it is difficult to compare sectors of activity among themselves. In addition, it is difficult for us to give personalized and specific results to each sector of activity. Instead, we are able to provide general recommendations to companies. However, having a large number of participants from different sectors avoids the problem of endogeneity of results.

REFERENCES

- Abbad, H. (2008). *L'orientation à long terme dans le canal de distribution : le cas de la relation entre la grande distribution et les PMI agroalimentaires au Maroc, Thèse de doctorat en Sciences de Gestion, Université de la Méditerranée.*
- Alejandro, T. B., Souza, D. V., Boles, J. S., Ribeiro, Á. H. P., and Monteiro, P. R. R. (2011). The outcome of company and account manager relationship quality on loyalty, relationship value and performance. *Industrial Marketing Management*, 40(1), 36–43. <https://doi.org/10.1016/j.indmarman.2010.09.008>
- Anderson, J. C. (1995). Relationships in Business Markets : Exchange Episodes , Value Creation , and Their Empirical Assessment.
- Anderson, J. C., and Narus, J. A. (1990). A Model of Distributor Firm and Manufacturer Firm Working Partnerships. *Journal of Marketing*, 54(1), 42. <https://doi.org/10.2307/1252172>
- Arend, R. J., Wisner, J. D., Arnett, D. B., and Badrinarayanan, V. (2005). *Enhancing customer-needs-driven crm strategies: Core selling teams, knowledge management competence, and relationship marketing competence.* Elsevier (Vol. 20). <https://doi.org/10.1080/08853134.2005.10749068>
- Athanasopoulou, P. (2009). Relationship quality a critical literature review.
- Athanasopoulou, P. (2006). Determining relationship quality in the development of business-to-business financial services. *Journal of Business-to-Business Marketing*, 13(1), 87–120. <https://doi.org/10.1300/J033v13n01>
- Bandara, S., Leckie, C., Lobo, A., and Hewege, C. (2017). Power and relationship quality in supply chains. *Asia Pacific Journal of Marketing and Logistics*, 29(3), 501–518. <https://doi.org/10.1108/APJML-09-2016-0165>
- Becker, J., Klein, K., and Wetzels, M. (2012). Hierarchical Latent Variable Models in PLS-SEM : Guidelines for Using Reflective-Formative Type Models. *Long Range Planning*, 45(5–6), 359–394. <https://doi.org/10.1016/j.lrp.2012.10.001>
- Belaya, V., and Hanf, J. H. (2009). The two sides of power in business-to-business relationships: implications for supply chain management. *The Marketing Review*, 9(4), 361–381. <https://doi.org/10.1362/146934709X479926>
- Benton, W. C., and Maloni, M. (2005). The influence of power driven buyer/seller relationships on supply chain satisfaction. *Journal of Operations Management*, 23(1), 1–22. <https://doi.org/10.1016/j.jom.2004.09.002>
- Billitteri, C., Nigro, G. Lo, and Perrone, G. (2013). How risk influences the choice of governance mode in biopharmaceutical inter-firm relationships. *International Business Review*, 22(6), 932–950. <https://doi.org/10.1016/j.ibusrev.2013.01.011>
- Blau, P. M. (1960). A Theory of Social Integration. *American Journal of Sociology*, 65(6), 545–556. <https://doi.org/10.1086/222785>
- Blau, P. M. (2017). *Exchange and Power in Social Life.* Routledge. <https://doi.org/10.4324/9780203792643>
- Brito, R. P., and Miguel, P. L. S. (2016). Power, Governance, and Value in Collaboration: Differences between Buyer and Supplier Perspectives. *International Journal of Laboratory Hematology*, 38(1), 42–49. <https://doi.org/10.1111/ijlh.12426>
- Carson, S. J., Devinney, T. M., Dowling, G. R., and John, G. (1999). Understanding Institutional Designs within Marketing Value Systems. *Journal of Marketing*, 63(4_suppl1), 115–130. <https://doi.org/10.1177/00222429990634s112>
- Chadwick-Jones, J. (1976). Social exchange theory: Its structure and influence in social psychology.
- Chancerel, J.-L. (1988). Théorie de la mesure et objets. *Espace Géographique*, 17(3), 218–231. <https://doi.org/10.3406/spgeo.1988.2780>
- Chandon, J.-L. (2007). *Théorie de la mesure et construction d' échelles. Recherche.*
- Chen, P.-Y., Chen, K.-Y., and Wu, L.-Y. (2017). The impact of trust and commitment on value creation in asymmetric buyer–seller relationships: the mediation effect of specific asset investments. *Journal of Business and Industrial Marketing*, 32(3), 457–471. <https://doi.org/10.1108/JBIM-09-2014-0171>
- Cherni, M., and Leroux, V. (2015). Dynamique relationnelle et impact sur la création- appropriation de la valeur dans les partenariats client-fournisseur Dynamique relationnelle et impact sur la création- appropriation de la valeur dans les partenariats client- fournisseur, 1–25.
- Chicksand, D., and Rehme, J. (2018). Total value in business relationships: exploring the link between power and value appropriation. *Journal of Business and Industrial Marketing*, 33(2), 174–182. <https://doi.org/10.1108/JBIM-05-2016-0100>

- Coff, R. W. (1999). When Competitive Advantage Doesn't Lead to Performance: The Resource-Based View and Stakeholder Bargaining Power. *Organization Science*, 10(2), 119–133. <https://doi.org/10.1287/orsc.10.2.119>
- Cox, A., Watson, G., Lonsdale, C., and Sanderson, J. (2004). Managing appropriately in power regimes : Relationship and performance management in 12 supply chain cases *Supply Chain Management : An International Journal* cases Article information :, (January 2015). <https://doi.org/10.1108/13598540410560748>
- Crook, T. R., and Combs, J. G. (2007). Sources and consequences of bargaining power in supply chains, 25, 546–555. <https://doi.org/10.1016/j.jom.2006.05.008>
- Crosby, L. A., Evans, K. R., and Cowles, D. (1990). Relationship Quality in Services Selling: An Interpersonal Influence Perspective. *Journal of Marketing*, 54(3), 68–81. <https://doi.org/10.1177/002224299005400306>
- Deligonul, S., Kim, D., Roath, A. S., and Cavusgil, E. (2006). The Achilles' heel of an enduring relationship: Appropriation of rents between a manufacturer and its foreign distributor. *Journal of Business Research*, 59(7), 802–810. <https://doi.org/10.1016/j.jbusres.2005.11.004>
- Dion, P., and Goodman, L. (2001). The Determinants of Commitment in the Distributor – Manufacturer Relationship. *Industrial Marketing Management*, 30, 287–300. Retrieved from <https://www.sciencedirect.com/science/article/pii/S0019850199000929>
- Doney, P. M., and Cannon, J. P. (1997). An Examination of the Nature of Trust in Buyer–Seller Relationships. *Journal of Marketing*, 61(2), 35–51. <https://doi.org/10.1177/002224299706100203>
- Dwyer, R., Schurr, F., Paul, H., and Oh, S. (1987). Buyer-Seller Developing Relationships. *American Journal of Marketing*, Vol. 51, No. 2 (Apr., 1987), Pp. 11-27, 51(2), 11–27.
- Dyer, J. H., and Chu, W. (2011). The determinants of trust in supplier-automaker relationships in the US, Japan, and Korea. *Journal of International Business Studies*, 42(1), 10–27. <https://doi.org/10.1057/jibs.2010.34>
- Dyer, J. H., and Singh, H. (1998). The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage. *Academy of Management Review*, 23(4), 660–679. <https://doi.org/10.5465/amr.1998.1255632>
- Ellegaard, Chris; Medlin, Christopher John; Geersbro, J. (2014). Value Appropriation in Business Exchange - Literature Review and Future Research Opportunities Introduction. *Journal of Business and Industrial Marketing*, 29(April), 185–198.
- Emerson, R. M. (1962). Power-dependence relations. *American Sociological Review*, 27(1), 31–41. Retrieved from <https://www.jstor.org/stable/2089716>
- Fang, E., Palmatier, R. W., and Evans, K. R. (2008). Influence of customer participation on creating and sharing of new product value. *Journal of the Academy of Marketing Science*, 36(3), 322–336. <https://doi.org/10.1007/s11747-007-0082-9>
- Ferrer, M., Santa, R., Hyland, P. W., and Bretherton, P. (2010). Relational factors that explain supply chain relationships. *Asia Pacific Journal of Marketing and Logistics*, 22(3), 419–440. <https://doi.org/10.1108/13555851011062304>
- Field, A. (2005). *Discovering statistics using SPSS*. Thousand Oaks, CA, US.
- Fishbein, M., and Ajzen, I. (1977). Belief, attitude, intention, and behavior: An introduction to theory and research. Retrieved from <https://philarchive.org/archive/FISBAI>
- Fornell, C., and Bookstein, F. L. (1982). Two Structural Equation Models: LISREL and PLS Applied to Consumer Exit-Voice Theory. *Journal of Marketing Research*, 19(4), 440–452. <https://doi.org/10.1177/002224378201900406>
- Fornell, C., and Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39. <https://doi.org/10.2307/3151312>
- Francis, M., Fisher, R., Thomas, A., and Rowlands, H. (2014). The meaning of 'value' in purchasing, logistics and operations management. *International Journal of Production Research*, 52(22), 6576–6589. <https://doi.org/10.1080/00207543.2014.903349>
- Frazier, G. L., and Rody, R. C. (1991). The Use of Influence Strategies in Interfirm Relationships in Industrial Product Channels. *Journal of Marketing*, 55(1), 52–69. <https://doi.org/10.1177/002224299105500105>
- Frazier, G. L., and Summers, J. O. (1986). Perceptions of Interfirm Power and its use within a Franchise Channel of Distribution. *Journal of Marketing Research*, 23(2), 169–176. <https://doi.org/10.1177/002224378602300209>
- Fynes, B., Voss, C., and de Búrca, S. (2005). The impact of supply chain relationship dynamics on manufacturing performance. *International Journal of Operations and Production Management*, 25(1), 6–19. <https://doi.org/10.1108/01443570510572213>
- Ganesan, S. (1994). Determinants of Long-Term in Buyer-Seller Orientation Relationships. *The Journal of Marketing*, 58(April), 1–19. <https://doi.org/10.2307/1252265>
- Gelderman, C. J., Semeijn, J., and De Zoete, R. (2008). The use of coercive influence strategies by dominant suppliers. *Journal of Purchasing and Supply Management*, 14(4), 220–229. <https://doi.org/10.1016/j.pursup.2008.06.003>
- Griffith, D. A., Harvey, M. G., and Lusch, R. F. (2006). Social exchange in supply chain relationships: The resulting benefits of procedural and distributive justice. *Journal of Operations Management*. <https://doi.org/10.1016/j.jom.2005.03.003>

- Gulati, R., and Sytch, M. (2007). Dependence Asymmetry and Joint Dependence in Interorganizational Relationships: Effects of Embeddedness on a Manufacturer's Performance in Procurement Relationships. *Administrative Science Quarterly*, 52(1), 32–69. <https://doi.org/10.2189/asqu.52.1.32>
- Hair, J. F., Sarstedt, M., Ringle, C. M., and Gudergan, S. P. (2018). *Advanced Issues in Partial Least Squares Equation Modeling*.
- Hausman, A., and Johnston, W. J. (2010). Industrial Marketing Management The impact of coercive and non-coercive forms of influence on trust, commitment, and compliance in supply chains. *Industrial Marketing Management*, 39(3), 519–526. <https://doi.org/10.1016/j.indmarman.2009.05.007>
- Henneberg, S., Jiang, Z., Shiu, E., and Naude, P. (2016). Relationship Quality in Business to Business Relationships-Reviewing the Current Literatures and Proposing a New Measurement Model. *Psychology and Marketing*, 33(4), 297–313. <https://doi.org/10.1002/mar.20876>
- Homans, G. C. (1958). Social Behavior as Exchange. *American Journal of Sociology*, 63(6), 597–606. <https://doi.org/10.1086/222355>
- Jap, S. D. (2001). "Pie Sharing" in Complex Collaboration Contexts. *Journal of Marketing Research*, 38(1), 86–99. <https://doi.org/10.1509/jmkr.38.1.86.18827>
- JF Hair Jr, GTM Hult, C Ringle, M. S. (2014). *A Primer on Partial Least Squares Structural Equation Modeling*. sage publication (Vol. 46). <https://doi.org/10.1016/j.lrp.2013.01.002>
- JF Hair Jr, GTM Hult, C Ringle, M. S. (2017). *A Primer on Partial Least Squares Structural Equation Modeling*. sage publication. <https://doi.org/10.1016/j.lrp.2013.01.002>
- Johnson, J. L., Sakano, T., Cote, J. A., and Onzo, N. (1993). The Exercise of Interfirm Power and Its Repercussions in U.S.-Japanese Channel Relationships. *Journal of Marketing*, 57(2), 1–10. <https://doi.org/10.1177/002224299305700201>
- Jonsson, P., and Zineldin, M. (2003). Achieving high satisfaction in supplier-dealer working relationships. *Supply Chain Management: An International Journal*, 8(3), 224–240. <https://doi.org/10.1108/13598540310484627>
- Kale, P., Singh, H., and Perlmutter, H. (2000). Learning and protection of proprietary assets in strategic alliances: building relational capital. *Strategic Management Journal*, 21(3), 217–237. [https://doi.org/10.1002/\(SICI\)1097-0266\(200003\)21:3<217::AID-SMJ95>3.0.CO;2-Y](https://doi.org/10.1002/(SICI)1097-0266(200003)21:3<217::AID-SMJ95>3.0.CO;2-Y)
- Kang, J. (2013). Value Creation and Appropriation in Strategic Alliances: Roles of Resource Characteristics and Structural Position in Alliance Network. *Business and Management Review*, 3(02), 1–9.
- Krause, D. R., and Ellram, L. M. (1997). Success factors in supplier development. *International Journal of Physical Distribution and Logistics Management*, 27(1), 39–52. <https://doi.org/10.1108/09600039710162277>
- Kumar, N., Scheer, L. K., and Steenkamp, J.-B. E. M. (1995). The Effects of Perceived Interdependence on Dealer Attitudes. *Journal of Marketing Research*, 32(3), 348. <https://doi.org/10.2307/3151986>
- Lacoste, S., and Blois, K. (2015). Suppliers' power relationships with industrial key customers. *Journal of Business and Industrial Marketing*, 30(5). <https://doi.org/10.1108/JBIM-03-2013-0057>
- Lacroux, A. (2009). L'Analyse Des Modeles De Relations Structurelles Par La Methode Pls : Une Approche Emergente Dans La Recherche. In *XXème congrès de l'AGR* (pp. 1–27).
- Lambe, C. J., Wittmann, C. M., and Spekman, R. E.. Social Exchange Theory and Research on Business-to-Business Relational Exchange. *Journal of Business-to-Business Marketing ISSN: 0628*(March), 0–36. <https://doi.org/10.1300/J033v08n03>
- Leonidou, L. C., Talias, M. A., and Leonidou, C. N. (2008). Exercised power as a driver of trust and commitment in cross-border industrial buyer – seller relationships, 37, 92–103. <https://doi.org/10.1016/j.indmarman.2007.08.006>
- Lindgreen, Adam, Martin K. Hingley, D. B. G. and R. E. M. (2012). Value in Business and Industrial Marketing: Past, Present, and Future. *Industrial Marketing Management*, 41(1), 207–214.
- Lindgreen, A., and Wynstra, F. (2005). Value in business markets: What do we know? Where are we going? *Industrial Marketing Management*, 34(7 SPEC. ISS.), 732–748. <https://doi.org/10.1016/j.indmarman.2005.01.001>
- Liu, Y., Li, Y., and Zhang, L. (2010). Control mechanisms across a buyer-supplier relationship quality matrix. *Journal of Business Research*, 63(1), 3–12. <https://doi.org/10.1016/j.jbusres.2009.01.005>
- Maloni, M., and Benton, W. C. (2000). Power influences in the Supply Chain. *Journal of Business Logistics*, 21(1), 49–73. <https://doi.org/10.1017/CBO9781107415324.004>
- McDonald, F. (1999). The Importance of Power in Partnership Relationships. *Journal of General Management*, 25(1), 43–59. <https://doi.org/10.1177/030630709902500103>
- Miguel, P. L. S., Brito, L. A. L., Fernandes, A. R., Tescari, F. V. C. S., and Martins, G. S. (2014). Relational value creation and appropriation in buyer-supplier relationships. *International Journal of Physical Distribution and Logistics Management*, 44(7), 559–576. <https://doi.org/10.1108/IJPDLM-09-2012-0291>
- Mizik, N., and Jacobson, R. (2003). The Financial Implications of Shifts in Value Appropriation : *Journal of Marketing*, 67(January), 63–76.

- Morgan, R. M., and Hunt, S. D. (1994). Theory of Relationship Marketing, *58*(3), 20–38.
- Nunnally, J. (1978). Psychometric theory (2nd edit.) mcgraw-hill.
- Nunnally, J., and IH Bernstein. (1994). Psychometric Theory. *McGraw-Hill New York, NY*.
- Nyaga, G. N., Lynch, D. F., Marshall, D., and Ambrose, E. (2013). Power asymmetry, adaptation and collaboration in dyadic relationships involving a powerful partner. *Journal of Supply Chain Management*, *49*(3), 42–65. <https://doi.org/10.1111/jscm.12011>
- Nyaga, G. N., and Whipple, J. M. (2011). Relationship quality and performance outcomes: Achieving a sustainable competitive advantage. *Journal of Business Logistics*, *32*(4), 345–360. <https://doi.org/10.1111/j.0000-0000.2011.01030.x>
- Palmatier, R. W. (2008). Interfirm Relational Drivers of Customer Value. *Journal of Marketing*, *72*(4), 76–89. <https://doi.org/10.1509/jmkg.72.4.76>
- Ringle, C. M., Wende, S., and Becker, J.-M. (2015). “SmartPLS 3.” Boenningstedt. *SmartPLS GmbH*.
- Sandberg, E., Pal, R., and Hemilä, J. (2018). Exploring value creation and appropriation in the reverse clothing supply chain. *International Journal of Logistics Management*, *29*(1), 90–109. <https://doi.org/10.1108/IJLM-10-2016-0241>
- Scheer L.K., Kumar N., and Steenkamp J.B.E.M. (2003). Reactions to perceived inequity in US and Dutch interorganizational relationships. *Academy of Management Journal*, *46*(3), 303–316.
- Skinner, Steven J., Gassenheimer, Jule B., and Kelley, S. W. (1992). Cooperation in supplier-dealer relations. *Journal of Retailing*.
- Sosik, J. J., Kahai, S. S., and Piovoso, M. J. (2009). Silver Bullet or Voodoo Statistics? *Group and Organization Management*, *34*(1), 5–36. <https://doi.org/10.1177/1059601108329198>
- Tescari, F. C., and Brito, L. A. L. (2016). Value Creation and Capture in Buyer-Supplier Relationships: a New Perspective. *RAE Revista de Administracao de Empresas*, *56*, 474–489. <https://doi.org/10.1590/S0034-759020160503>
- Thibaut, J. W., and Kelley, H. H. (2017). The Social Psychology of Groups. *The American Catholic Sociological Review*, *20*(4), 345. <https://doi.org/10.2307/3709294>
- Uлага, W., and Eggert, A. (2006). Relationship value and relationship quality: Broadening the nomological network of business-to-business relationships. *European Journal of Marketing*, *40*(3–4), 311–327. <https://doi.org/10.1108/03090560610648075>
- Wagner, S. M., Eggert, A., and Lindemann, E. (2010). Creating and appropriating value in collaborative relationships. *Journal of Business Research*, *63*(8), 840–848. <https://doi.org/10.1016/j.jbusres.2010.01.004>
- Wagner, S. M., and Lindemann, E. (2008). Determinants of value sharing in channel relationships. *Journal of Business and Industrial Marketing*, *23*(8), 544–553. <https://doi.org/10.1108/08858620810913353>
- Walter, A., and Ritter, T. (2003). The influence of adaptations, trust, and commitment on value-creating functions of customer relationships. *Journal of Business and Industrial Marketing*, *18*(4–5), 353–365. <https://doi.org/10.1108/08858620310480250>
- Wathne, K. H., and Heide, J. B. (2000). Opportunism in Interfirm Relationships: Forms, Outcomes, and Solutions. *Journal of Marketing*, *64*(4), 36–51. <https://doi.org/10.1509/jmkg.64.4.36.18070>
- Wilkinson, I. F. (1979). Power and satisfaction in channels of distribution. *Journal of Retailing*.
- Yan, T., and Wagner, S. M. (2017). Do what and with whom? value creation and appropriation in inter-organizational new product development projects. *International Journal of Production Economics*, *191*(May), 1–14. <https://doi.org/10.1016/j.ijpe.2017.05.010>
- Zhao, S., Yu, H., Xu, Y., and Bi, Z. (2014). Relationship-specific investment, value creation, and value appropriation in cooperative innovation. *Information Technology and Management*, *15*(2), 119–130. <https://doi.org/10.1007/s10799-014-0174-4>
- Zhao, X., Lynch, J. G., and Chen, Q. (2011). Reconsiderer Baron et Kenny: mythes et verites a propos de l’analyse de mediation. *Recherche et Applications En Marketing*, *26*(1), 81–95. <https://doi.org/10.1177/076737011102600105>

Appendix 1: Item Formulations

TRUST	
Trust 1	Our main customer kept promises it made to our firm
Trust 2	Our main customer was always honest to us.
Trust 3	We believed the information that our main customer provided us.
Trust 4	Our main customer was genuinely concerned that our business succeeded.
Trust 5	When making important decisions, our main customer considered our welfare as well as its own.
Trust 6	We trusted our main customer keeps our best interests in mind.
Trust 7	Our main customer was trustworthy.
COMMITMENT	
COMMIT1	The relationship with our main customer is something to which we are very committed
COMMIT2	The relationship with our main customer is very important to our business
COMMIT3	The relationship with our main customer is something our business intends to maintain indefinitely
COMMIT4	The relationship with our main customer is very much like being family
COMMIT5	The relationship with our main customer is something our business really cares about
COMMIT6	The relationship with our main customer deserves our business' maximum effort to maintain
COMMUNICATION	
COMMIT1	In this relationship, it is expected that any information that might help our main customer will be provided to them
COMMIT2	Exchange of information in this relationship takes place frequently and informally and not only according to a pre-specified agreement
COMMIT3	It is expected that the parties will provide proprietary information if it can help the other party
COMMIT4	It is expected that we will keep each other informed about events or changes that affect the other party
COMMIT5	The communication effort between our main customer and our firm involves many inter-firm contacts
COMMIT6	Exchange of information in this relationship takes place in a timely manner
COERCIVE POWER	
CPW1	Failure to comply with the requests of our main customer will result in financial and other penalties against our company.
CPW2	Our main customer threatens to withdraw from what they originally promised if we do not comply with their request.
CPW3	Our main customer threatens to take legal action if we do not comply with their requests.
CPW4	Our main customer withholds important support for our firm, in requesting compliance with their demand.
CPW5	Our main customer threatens to deal with another supplier, in order to make us submit to their demand.
NON-COERCIVE POWER	
NCPW1	Our main customer offers specific incentives to us when we are reluctant to cooperate with them.
NCPW2	Our main customer has the upper hand in the relationship due to power granted to them by the contract.
NCPW3	Our main customer demands our compliance because of knowing that we appreciate and admire them.
NCPW4	Our main customer use their unique competence to make our company accept their recommendations
NCPW5	Our main customer partner withholds critical information concerning the relationship to better control our company.
VALUE CREATION AND VALUE APPROPRIATION	
Input supplier	Our company's contributions to the relationship
Input customer	Customer X's contributions to the relationship

Outcome supplier	The outcomes we received from the relationship
Outcome customer	The outcomes Customer X received from the relationship
Tangible input supplier	Our company's tangible (financial and personnel) contributions to the relationship
Tangible input customer	Customer X's tangible (financial and personnel) contributions to the relationship
Tangible outcome supplier	The tangible (financial) outcomes we received from the relationship
Tangible outcome customer	The tangible (financial) outcomes customer X received from the relationship
Intangible input supplier	Our company's intangible (know-how and patents) contributions to the relationship
Intangible input customer	Customer X's intangible (know-how and patents) contributions to the relationship
Intangible outcome supplier	The intangible (know-how and patents) outcomes we received from the relationship
Intangible outcome customer	The intangible (know-how and patents) outcomes customer X received from the relationship
RELATIONAL SATISFACTION	
SATISFAC1	We were very satisfied with the relationship with our main customer
SATISFAC2	We were pleased to work with our main customer
SATISFAC3	The relationship with our main customer was very favorable for us
RELATIONSHIP CONTINUITY	
CONTIN1	We expect our relationship with our main customer to continue for a long time
CONTIN2	Renewal of relationship with our main customer is virtually automatic
CONTIN3	It is unlikely that our firm will still be doing business with our main customer in two years

Appendix 2 : Discriminant Validity

175-196

Saad, Nouredine

	Value appropriation	Communication	Trust	Relationship continuity	Value creation	Commitment	Coercive power	Non Coercive power	Relationship quality	Satisfaction
VAL SUPL 1	0.959	0.318	0.347	0.438	0.808	0.287	-0.191	0.179	0.373	0.490
VAL SUPL 2	0.961	0.280	0.350	0.420	0.854	0.221	-0.292	0.221	0.335	0.478
COMM2	0.275	0.700	0.458	0.325	0.309	0.453	-0.243	0.049	0.619	0.240
COMM2	0.275	0.700	0.458	0.325	0.309	0.453	-0.243	0.049	0.619	0.240
COMM3	0.318	0.770	0.441	0.364	0.292	0.555	-0.194	0.059	0.675	0.402
COMM3	0.318	0.770	0.441	0.364	0.292	0.555	-0.194	0.059	0.675	0.402
COMM4	0.265	0.875	0.490	0.340	0.309	0.647	-0.136	0.048	0.768	0.313
COMM4	0.265	0.875	0.490	0.340	0.309	0.647	-0.136	0.048	0.768	0.313
COMM5	0.191	0.800	0.427	0.212	0.214	0.554	0.023	0.206	0.678	0.233
COMM5	0.191	0.800	0.427	0.212	0.214	0.554	0.023	0.206	0.678	0.233
COMM6	0.217	0.883	0.449	0.279	0.212	0.584	-0.030	0.096	0.729	0.293
COMM6	0.217	0.883	0.449	0.279	0.212	0.584	-0.030	0.096	0.729	0.293
TRUST1	0.248	0.508	0.794	0.318	0.302	0.495	-0.147	0.104	0.712	0.424
TRUST 1	0.248	0.508	0.794	0.318	0.302	0.495	-0.147	0.104	0.712	0.424
TRUST 2	0.238	0.365	0.725	0.373	0.247	0.467	-0.328	0.088	0.620	0.393
TRUST 2	0.238	0.365	0.725	0.373	0.247	0.467	-0.328	0.088	0.620	0.393
TRUST 3	0.274	0.463	0.765	0.289	0.321	0.503	-0.277	0.159	0.686	0.371
TRUST 3	0.274	0.463	0.765	0.289	0.321	0.503	-0.277	0.159	0.686	0.371
TRUST 4	0.227	0.396	0.728	0.302	0.248	0.355	-0.294	0.095	0.590	0.351
TRUST 4	0.227	0.396	0.728	0.302	0.248	0.355	-0.294	0.095	0.590	0.351
TRUST 5	0.311	0.386	0.803	0.251	0.328	0.304	-0.285	0.286	0.601	0.464
TRUST 5	0.311	0.386	0.803	0.251	0.328	0.304	-0.285	0.286	0.601	0.464
TRUST 6	0.361	0.438	0.794	0.314	0.373	0.431	-0.279	0.259	0.663	0.451

TRUST 6	0.361	0.438	0.794	0.314	0.373	0.431	-0.279	0.259	0.663	0.451
TRUST 7	0.302	0.452	0.791	0.192	0.306	0.453	-0.174	0.078	0.675	0.477
TRUST 7	0.302	0.452	0.791	0.192	0.306	0.453	-0.174	0.078	0.675	0.477
CONTIN 1	0.423	0.370	0.347	0.889	0.471	0.536	-0.232	0.144	0.484	0.586
CONTIN 2	0.405	0.339	0.357	0.837	0.450	0.395	-0.406	0.204	0.425	0.438
CONTIN 3	0.310	0.242	0.257	0.854	0.389	0.322	-0.323	0.067	0.319	0.415
VALUE 1	0.845	0.335	0.403	0.490	0.975	0.334	-0.298	0.218	0.421	0.503
VAL UE 2	0.844	0.306	0.365	0.507	0.975	0.293	-0.312	0.240	0.378	0.498
COMMIT 1	0.222	0.558	0.502	0.434	0.304	0.828	-0.177	0.054	0.729	0.359
COMMIT 1	0.222	0.558	0.502	0.434	0.304	0.828	-0.177	0.054	0.729	0.359
COMMIT 2	0.248	0.579	0.463	0.394	0.275	0.857	-0.069	0.082	0.730	0.332
COMMIT 2	0.248	0.579	0.463	0.394	0.275	0.857	-0.069	0.082	0.730	0.332
COMMIT 3	0.212	0.595	0.444	0.447	0.298	0.868	-0.086	0.216	0.732	0.343
COMMIT 3	0.212	0.595	0.444	0.447	0.298	0.868	-0.086	0.216	0.732	0.343
COMMIT 4	0.193	0.532	0.450	0.335	0.239	0.756	-0.192	0.068	0.669	0.308
COMMIT 4	0.193	0.532	0.450	0.335	0.239	0.756	-0.192	0.068	0.669	0.308
COMMIT 6	0.220	0.618	0.469	0.454	0.219	0.838	-0.102	0.008	0.739	0.301
COMMIT 6	0.220	0.618	0.469	0.454	0.219	0.838	-0.102	0.008	0.739	0.301
CPW 1	-0.138	0.005	-0.152	-0.234	-0.218	0.017	0.796	0.101	-0.058	-0.207
CPW 2	-0.277	-0.105	-0.253	-0.297	-0.307	-0.080	0.890	0.004	-0.178	-0.212
CPW 3	-0.171	-0.197	-0.248	-0.380	-0.233	-0.231	0.799	0.071	-0.265	-0.248
CPW 4	-0.126	-0.090	-0.241	-0.222	-0.199	-0.111	0.771	0.066	-0.178	-0.144
CPW 5	-0.260	-0.161	-0.395	-0.319	-0.281	-0.189	0.777	-0.035	-0.300	-0.382
NCPW 1	0.168	0.151	0.285	0.206	0.221	0.143	-0.154	0.771	0.232	0.333
NCPW 3	0.191	0.053	0.098	0.094	0.181	0.012	0.114	0.833	0.066	0.248

<i>NCPW 4</i>	0.140	0.047	0.044	0.068	0.152	0.080	0.214	0.818	0.066	0.090
<i>SATISFAC1</i>	0.436	0.320	0.478	0.527	0.440	0.379	-0.293	0.209	0.464	0.898
<i>SATISFAC2</i>	0.482	0.355	0.497	0.546	0.484	0.370	-0.280	0.296	0.482	0.951
<i>SATISFAC3</i>	0.478	0.342	0.530	0.501	0.499	0.348	-0.265	0.315	0.483	0.921

Appendix 3:**Assessment of the reliability and validity of convergence of the global construct of relationship quality**

Elements	Factor loading	Factor loading squared	Error variance = 1 - Factor loading squared
Trust	0,846	0,715716	0,284284
Commitment	0,868	0,753424	0,246576
Communication	0,859	0,737881	0,262119
Total factor loading	2,573	2,207021	0,792979
Total factor loading squared	6,620329		
Total factor loading squared + total error variance			7,413308
AVE ¹			0,857
CR ²			0,893

¹ AVE = (Total factor loading / number of factor)

² CR = Total factor loading squared / (Total factor loading squared + Total Error variance)

HOW THE SHIFT TO OMNI-CHANNEL COMMERCE STRATEGY AIDS A FURNITURE RETAILER'S COMPETITIVE DIFFERENTIATION: THE CASE OF XXX LUTZ IN AUSTRIA

DOI: 10.17261/Pressacademia.2019.1131

JMML-V.6-ISS.3-2019(6)-p.197-203

Lisa Maria Wieser¹, Yung-Shen Yen²

¹University of Applied Sciences Upper Austria, Campus Steyr, Austria.

lisa.wieser@students.fh-steyr.at, ORCID: 0000-0002-0969-3275

²Providence University, Department of Computer Science and Information Management, Taichung, Taiwan.

ysyen@pu.edu.tw, ORCID: 0000-0003-1146-9771

Date Received: June 22, 2019

Date Accepted: September 22, 2019

To cite this document

Wieser, L., M., Yen, Y., S., (2019). How the shift to omni-channel commerce strategy aids a furniture retailer's competitive differentiation: the case of xxx Lutz in Austria. *Journal of Management, Marketing and Logistics (JMML)*, V.6(3), p.197-203

Permenant link to this document: <http://doi.org/10.17261/Pressacademia.2019.1131>

Copyright: Published by PressAcademia and limited licenced re-use rights only.

ABSTRACT

Purpose- This study aims to devise a well-grounded omni-channel commerce strategy for the furniture retailers.

Methodology- We used XXX Lutz, a well-established furniture retailer in Austria, as a study case. A content analysis of using website information, academic papers and social media documents, was conducted.

Findings- The finding shows that XXX Lutz's shift to an omni-channel commerce strategy requires a smoother integration of all utilized channels. This could be achieved by two approaches, namely informational integration and physical integration. Moreover, potential challenges XXX Lutz might face by adopting an omni-channel strategy are identified and adequate solutions are proposed.

Conclusion- This study extends the understanding of the omni-channel strategy for the furniture retailers. Our findings affirm the assumption that informational and physical integrations are two important dimensions of channel integration for the omni-channel retailers.

Keywords: Omni-channel, cross-channel, informational integration, physical integration, retailing.

JEL Codes: M30, M31

1. INTRODUCTION

The emergence of the World Wide Web, technological advancement as well as increasing usage of mobile devices have tremendously changed the shopping behavior of customers (Cochoy, 2012). Along with the increasing fusion of sales channels, this changing consumer behavior is one of the main reasons for the modified retail landscape. Nowadays, consumers are ubiquitously connected and present on multiple channels (Schmieder, 2010). In the 21st century, consumers look for information online, gather existing customer feedback from social media platforms and might finally decide to purchase a product from a physical store (Salma and Anil, 2015). This calls firms and retailers to rethink their current handling of sales channels for the sake of not losing customers in the close future and successfully competing with rivals (Schmieder, 2010), the Austrian furniture retailer XXX Lutz alike.

Considering that just recently one of XXX Lutz main competitors, the Swedish furniture retailer IKEA, has successfully introduced an omni-channel commerce strategy using a virtual reality application so that customers can preview IKEA's furniture in their own home (Gist, 2019), highlights the importance of omni-channel commerce in the furniture retail industry. But what exactly is an omni-channel commerce strategy and why should XXX Lutz care? Omni-channel retailing is defined as a strategy that enables clients a seamless shopping experience by unifying a brand's sales channels through transactional as well as informational touchpoints (Beck and Rygl, 2015). Consequently, omni-channel retailing combines the information-richness of online shopping with the personal shopping experience in a physical store (Rigby, 2011). Although with its positioning IKEA targets a different audience than XXX Lutz, this movement must not be ignored, especially since XXX Lutz's customers who pay a premium price will very likely expect a seamless shopping experience in the near future as well.

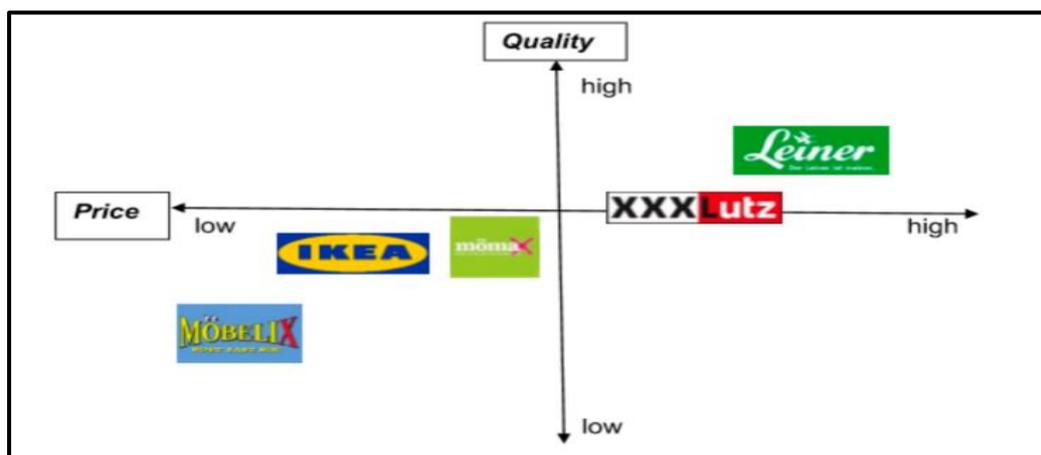
Accordingly, this study aims to develop an omni-channel commerce strategy suggestion for the Austrian furniture retailer XXX Lutz and highlights the benefits for both the consumer and the retailer itself. A content analysis was conducted. We used secondary data sources, such as website information, academic papers and social media documents to underline the contents theoretically. Thus, the structure of the study is as follows: After an initial introduction of XXX Lutz, the firm's current sales channel strategy will be analyzed. Subsequently, a well-grounded omni-channel commerce strategy for XXX Lutz will be proposed and benefits for both the consumer and the firm highlighted. After that, this study elaborates on inescapable challenges an omni-channel strategy implementation may carry along and proposes solutions. Finally, the last section concludes this study and briefly discusses both its academic contribution and limitations.

2. ABOUT THE XXX LUZE GROUP

In 1945, Gertrude Lutz founded the company "Lutz" in Haag am Hausruck - Austria. Her vision was to satisfy customers through a well sorted, appealing, high-quality product range. At first, Lutz focused on Austrian craftsmanship: The initial products at that time were hand-painted wooden boxes and traditional, country-style furniture. In the following decades, the small and regional furniture shop has gradually turned into one of the largest furniture retailers in the world. The goal was clear: Success through expansion – Lutz became XXX Lutz. The company defines its mission and vision as follows: XXX Lutz is a customer-focused business committed to becoming the best home furnishing retailer in our markets. By setting up clear and strong brand images, XXX Lutz aims to be the number one retailer by providing an outstanding customer experience throughout a great range of products, fair value, and excellent service. The XXX Lutz Group (2019) is proud of its 22.200 employees and has achieved a turnover of 4.4 billion Euro in 2019. Moreover, it is indispensable to mention that the XXX Lutz Group can be divided into three sub-groups: XXX Lutz, Möbelix and Mömax.

Figure 1 depicts the difference between the three sub-groups and the XXX Lutz Group's main competitors. It visualizes a comparison of selected furnishing retailers' strategic positioning according to price and quality. In particular, XXX Lutz offers high-quality products as justification for high prices. To put it in the words of Michael Porter, XXX Lutz and Leiner are pursuing a differentiation strategy while the other big players such as IKEA, Mömax, and Möbelix try to be leaders in costs. However, one must keep in mind that XXX Lutz, Mömax and Möbelix all belong to the same group and only vary in their strategic positioning aiming to appeal to different target customer segments.

Figure 1: Strategic Positioning of Selected Furniture Retailers



3. ANALYSIS OF XXX LUTZ'S CURRENT CHANNEL MANAGEMENT SYSTEM

This section is dedicated to describe XXX Lutz's current channel services. Neslin *et al.* (2006) indicated that a channel refers to an interaction medium between an organization and its customer. In the case of XXX Lutz, five major channels are in use for information-, communication-, and sales- purposes. These are the firm's physical stores, catalogues and newsletters, websites, mobile applications, and social media platforms.

XXX Lutz primary sales channel is its physical store. Since 1973 the firm has opened an average of 6 stores a year. Nowadays, the firm is with 260 stores in 13 European countries, a well-established furniture retailer (XXX Lutz Group, 2019). XXX Lutz's sales forces are paid on a commission basis. Also, catalogues and newsletters are in use, but solely for information and communication purposes. In other words, the firm does not sell its products and services through this channel. Likewise, the firm accepts customer calls, but by looking on their website where XXX Lutz gives customers the possibility to leave a message, one can clearly feel that the firm intends to shift customer-related communication to its online channels. To put it in another way, the phone is a diminishing communication channel.

Online channels such as websites, mobile applications, and social media platforms are becoming more and more important in the retail industry. XXX Lutz (2019) has adapted to this trend and offers more than 45.000 furniture products in its online store. Additionally, the firm offers special “online only” offers, excellent online consultation from store experts as well as the possibility to choose a variety of service offers from delivery to assembly. Apart from its website, XXX Lutz launched a mobile application as an additional sales channel. The firm’s application increases the accessibility for clients and allows them to purchase anywhere provided that their mobile device is connected to the Internet. Moreover, the firm uses social media platforms, such as Facebook, Instagram, and LinkedIn. However, a direct purchase via social media is not possible, but customers wanting to purchase a product they like via social media will be redirected to XXX Lutz’s online store.

Due to the fact that XXX Lutz’s channels are partially integrated from both the customer and the company’s point of view, it can be classified as a cross-channel retailer (Beck and Rygl, 2015). More precisely, as shown in Figure 2, XXX Lutz channels include its physical stores, the firm’s catalogues and newsletters, the XXX Lutz website and mobile applications as well as social media platforms. These channels are already partially linked through five main services. First, personal customer accounts ensure customer accessibility through both the retailer’s online website, but also through its mobile application. Thus, two channels are used for this service: the retailer’s online website as well as its mobile application. Second, the firm has already set measures to connect its online store more closely to the physical store by introducing the “XXX Lutz Dream Space Planner”. This allows customers to request an appointment in one of XXX Lutz’s physical stores during which experts will plan your personal dream space for free. Thus, the main channel used for XXX Lutz’s Dream Space Planner Service are the firm’s physical stores. Third, the company has already partially implemented QR-Codes, but only for selected products of the retailer’s catalogues. Thus, the main channel used is XXX Lutz’s catalogues. Fourth, XXX Lutz offers Click & Collect services to customers that interlink its online website and mobile application with its physical store. Fifth, all of XXX Lutz’s data is simultaneously updated on all electronic devices, indicating that its website is the primarily used channel.

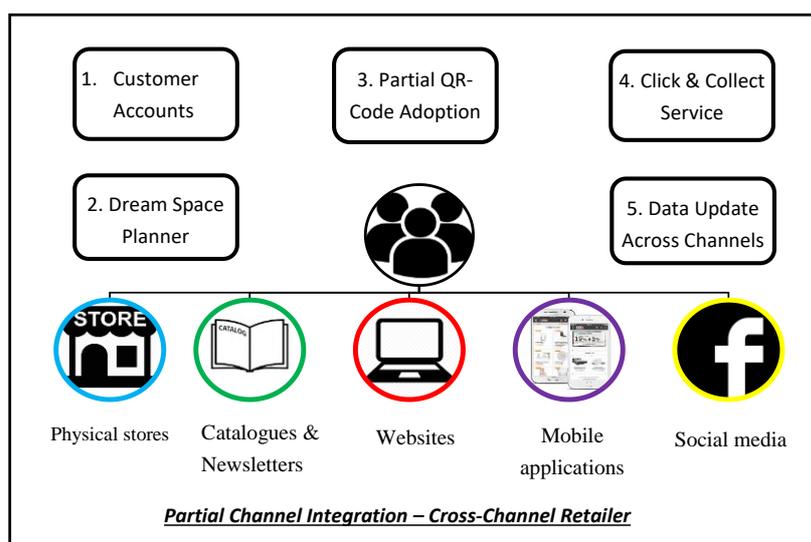


Figure 2. Analysis of XXX Lutz's current channel services offered to clients

4. PROPOSED OMNI-CHANNEL STRATEGY

Omni-channel Strategy refers to the strategy regarding the management of diverse channels to offer shoppers a seamless experience across all of the firm’s channels (Chatterjee, 2010). In the literature, there are no consensus of the definition of channel integration. Bendoly *et al.* (2005) demonstrated that channel integration has two factors, namely informational integration and physical integration. Lee and Kim (2010) argued that channel integration has five factors, including information consistency, freedom in channel selection, e-mail marketing, channel reciprocity, and customer service. Frasquet and Miquel (2017) found that channel integration has two factors, namely reciprocity and coordination. Reciprocity refers to the possibility of crossing the channels while shopping, and coordination refers to the alignment of offline and online offers. Yumurtacı Hüseyinoğlu *et al.* (2018) noted that omni-channel capability has three elements, namely channel consistency, cross-channel and social media. Although the definitions of channel integration in the literature are varied, the concepts of omni-channel commerce for retailers are similar. In other words, it is believed that coordinating and integrating the diverse channels can generate synergies that enhance the effectiveness of each channel and contribute to increase the performance of the retailer. Thus, this study adopted the study of Bendoly *et al.* (2005), which indicated that informational

integration and physical integration are two important elements of channel integration, as our proposed omni-channel model.

In the present study, XXX Lutz certainly is on the right path by already having managed the shift from a multi- towards a cross-channel retailer and already uses some aspects of an omni-channel strategy, such as the “XXX Lutz Dream Space Planner”, or QR-Codes. However, in order to become a true omni-channel retailer and offer clients a genuinely seamless purchasing experience, the firm is advised to a smoother integration of all its five utilized channels, which are namely its physical stores, the firm’s catalogues, websites, mobile applications and social media platforms.

4.1. Information Integration

Informational integration refers to the diverse channels providing information to one another. Thus, this study proposed six services to improve informational integration. First, by simultaneously introducing QR-Codes for the retailer’s entire product assortment across all suitable channels, the shopper’s journey could be made more convenient. The difference to the firm’s current channel-strategy, in which QR-Codes are only used for selected premium products in XXX Lutz’s catalogues is that the entire product assortment should be linked to profound online product information in its physical stores. Consequently, the primarily used channel is the firm’s physical store. This measure serves to connect the firm’s physical stores more tightly to the firm’s online channel. Additionally, the QR-Codes can be easily shown at the firm’s social media platforms and in its mobile application ensuring accessibility across all channels.

Second, XXX Lutz’s free “Dream Space Planning Service” is already part of its current channel management strategy, but should be emphasized even more and used to get clients showing online interest to the firm’s physical store. Thus, the difference to the current strategy is that it shall be emphasized and promoted even more, not only on its website but also on its social media platforms, in catalogues as well as in its mobile applications with the final aim to get more customers to its online planning service.

Third, the launch of an augmented reality application allowing customers to picture XXX Lutz’s products in their home is crucial in order for the firm to be able to compete with IKEA who has already proven to be the first mover when it comes to this feature. Although IKEA pursues a low-cost strategy and targets a different customer segment than XXX Lutz, one must keep this in mind since especially XXX Lutz’s customers who pay a premium price in exchange for high-quality products are very likely to expect a comparatively better customer experience. Thus, contrary to its current channel strategy, this measure helps the firm to stay competitive by more tightly linking the physical shopping experience with the retailer’s mobile application.

Fourth, introducing a customer review function on the firm’s social media platforms may enhance the firm’s credibility and give potential customers more security for product- and service purchases. The difference to the current channel strategy is that a customer review function on social media is currently unavailable, but it helps the retailer since it increases the likelihood that customers purchase either via the firm’s website, via its mobile application or in the physical store.

Fifth, the firm shall further improve its social media presence and promote it in its catalogues in order to strengthen its reputation. Social media is a crucial communication channel that nowadays almost anyone of later generations uses. Consequently, the client is always up to date and can inform himself. This measure does not differ that much to the firm’s current channel strategy, but keeping up a good brand reputation has an impact on all of the firm’s sales channels, such as its physical store, its online website as well as its mobile applications.

Sixth, XXX Lutz may introduce an online chat section that is available across all online channels and promoted in its catalogues, so that customers can easily contact the firm’s personnel regarding any matter of concern. Even if such an online chat is only available 10 hours a day, customers will accept a firm’s chat-opening-hours and feel totally cared for. Moreover, this will reduce the phone, e-mail and in-store traffic when it comes to matters that could easily be solved via an online chat. Thus, the difference is that an online chat section is not available in the retailer’s current channel management strategy, but it helps customers since they can easily contact an experienced employee from the physical store via the online chat section.

4.2. Physical Integration

Physical integration refers to the possibility of shopping across channels. Thus, this study proposed two services to improve physical integration. First, XXX Lutz store environment design – which literally resembles a maze – has to be improved which could be done by launching a section in XXX Lutz application that virtually guides customers through the store. The side-benefit of such an application section is that sales forces will have to spend less time on guiding customers through the store and can fully focus on their main tasks - consulting customers as well as selling goods and services. Consequently, and contrary to the current channel strategy, this measure helps to more tightly interlink the firm’s physical stores with the firm’s mobile application, since customers need to use the mobile navigation application, which represents the primarily used channel for providing this service - to enjoy a smooth in-store experience.

Second, the XXX Lutz Group is highly advised to let go of its other two sub-divisions "Möbelix" and "Mömax", because it confuses customers and causes doubts about the firm's high-quality product credibility. This measure entirely differs from the firm's current philosophy and has no direct effect on any of its channels. However, it would indirectly affect all of XXX Lutz's sales channels, since letting go of its two "low-price" sub-divisions, that are not the firm's core business anyways, allows the retailer to focus all its efforts on its core business, which is: Delivering its well-known premium XXX Lutz products to clients. The primary channel used for this measure are the retailer's physical stores.

Therefore, we may summarize that informational integration includes fully introducing QR-Codes, emphasizing XXX Lutz's Online Dream Space Planner, launching an augmented reality application, introducing a customer review function, improving its social media presence, introducing an online chat, whereas physical integration includes launching a store navigation application and staying focused on offering customers premium products for XXX Lutz. Figure 3 depicts the proposed services on how XXX Lutz can manage to shift from delivering customers a classy cross-channel experience towards flabbergasting them with an astonishing omni-channel adventure.

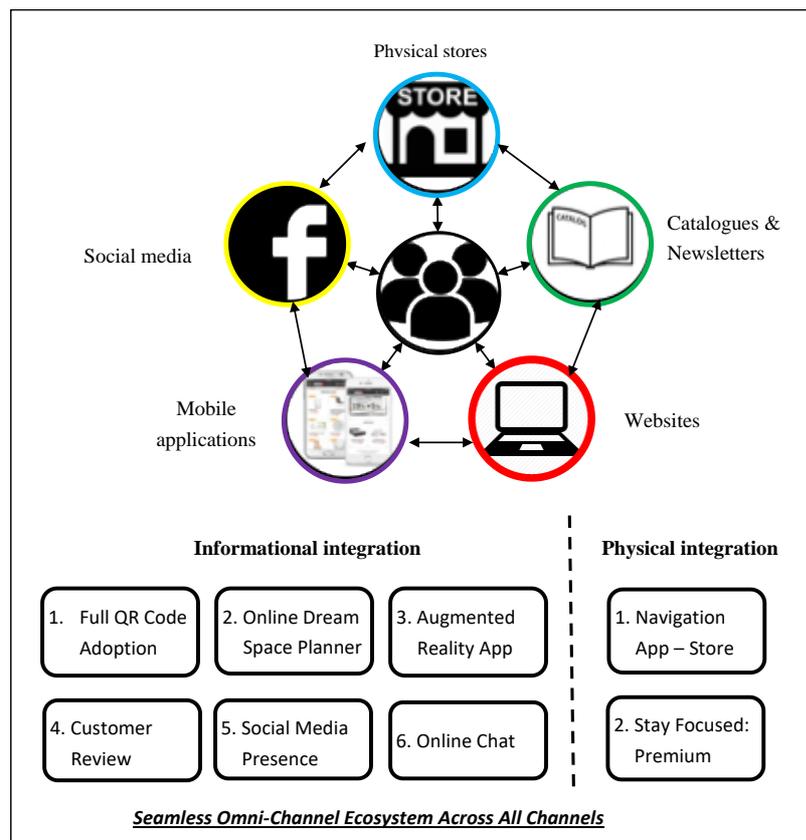


Figure 3. Proposed Omni-Channel services for XXX Lutz

5. CHALLENGES AND RECOMMENDED SOLUTIONS

As previously discussed, this study proposed some new services to implement an omni-channel strategy for XXX Lutz. However, shifting to an omni-channel management system may carry ineluctable challenges along. Picot-Coupey *et al.* (2016) categorized them into strategy-related challenges as well as development-related ones. In the strategy-related challenges, how to keep the consumer within the brand ecosystem and to reinforce lock-in effects (Verhoef *et al.*, 2015). Thus, adding, integrating or blurring channels raises marketing advantages concerning the coordination of the retail mix across channels may cause organizational challenges (Van Baal, 2014). Thus, XXX Lutz is advised to recruit a talented project manager that is capable of identifying and prioritizing challenges that may be coming during the firm's transition. This, in fact, might represent a challenge in itself, because finding a person that has competencies in the fields of both omni-channel retailing, as well as project management, might be tough. Moreover, XXX Lutz omni-channel implementation represents a major change for the firm. As with every organizational change management project, also the culture has to be adapted towards the requirements of the new omni-channel management system. However, managing change properly is not easy. Thus, XXX Lutz is recommended to announce a change management team that supports its newly hired, talented project manager and fosters a culture of change. Additionally, proper omni-channel implementation and culture change must involve the entire

organization and requires the support of senior managers. Therefore, XXX Lutz is advised to let its senior managers be the first ones officially announcing the new omni-channel strategy, highlighting its importance and communicating it downwards throughout the entire organization.

On the other hand, in the development-related challenges, XXX Lutz may have customer relationship management and information system concerns. For example, potential channel cannibalization might occur between the brick- and click-and-mortar store since customers might want to see the actual product but order it online since it appears to be more convenient. Consequently, XXX Lutz's sales forces that are paid on a commission-basis might get very frustrated if they consult a lot of customers, but do not make any sales presuming that most clients order online. This can only be avoided by the implementation of clear rules and regulations. For example, if customers purchase online, but they had been consulted in a store, the sales force should always give clients the personal business card in order for customers to remember their name. The online purchasing process should then contain a section asking the customer if they have been consulted in-store so that they can fill in the sales forces' name, or at least, the store location they had been consulted at. Besides, XXX Lutz must be aware of potential free riding issues (Arora and Sahney, 2018), especially when it comes to its free "Dream Space Planning Service". The firm can overcome this problem by introducing the following limitation: The Dream Space Planning Service, in general, is for free, but the customer does not get any print-outs or electronic files of the plans, unless the client agrees to order something, or pays for the service. This measure ensures that the customer cannot make use of the firm's service unless a purchase is made and thus, free-riding is precluded. Moreover, the new applied technologies – such as the QR-Code-, or the Augmented Reality Application - represent major challenges and might even be useless if the customer does not know how to use it. Thus, XXX Lutz is recommended to stick to the study of Lewis *et al.*'s (2014) advices, who highlight that training of the firm's own staff in the fields of technology and promotion is important. The reason is that the staff's ability to promote used in-store technology represents a good mean to bridge the online and offline experience and educates the customer on how to actually use the available technology. Overall, there may be plenty of other challenges coming up. XXX Lutz may be capable of identifying and prioritizing those unanticipated hurdles for the sake of attaining a holistic omni-channel strategy.

6. CONCLUSION

The main objective of this paper is to devise a well-grounded omni-channel commerce strategy for XXX Lutz. Taken together, the proposed services shall be emphasized in order for XXX Lutz to offer customers truly seamless shopping experiences.

The findings suggest that XXX Lutz shift to an omni-channel commerce strategy requires a smoother integration of all utilized channels. This could be achieved by two approaches, namely informational integration and physical integration. Informational integration includes: First, introducing QR-Codes linking the physical product to profound online product information so that the shopper's journey can be made more convenient. Second, XXX Lutz's Online Dream Space Planner shall be emphasized even more and used to get customers showing online interest to the firm's brick-and-mortar store. Third, the launch of an augmented reality application allowing customers to picture XXX Lutz's products in their home is crucial in order for the firm to be able to compete with IKEA. Fourth, introducing a review function for customers may enhance the firm's credibility and get people curious to visit the physical store of such a premium furniture retailer. Fifth, the firm shall further on improve its social media presence in order to strengthen its reputation and keep customers up to date. Sixth, XXX Lutz may introduce an online chat section in which customers can easily contact the firm's personnel regarding any matter of concern. On the other hand, physical integration includes: First, XXX Lutz store environment design – which literally resembles a maze – has to be improved. This could be done by launching a section in XXX Lutz application that virtually guides customers through the store. Second, the XXX Lutz Group is highly advised to let go of its other two low-cost sub-divisions "Möbelix" and "Mömax", because it simply confuses customers and causes them to doubt the firm's high-quality product credibility. Moreover, potential challenges XXX Lutz might face by adopting an omni-channel strategy have been identified and adequate solutions proposed.

This study contributes to the academic research by representing a sample guideline on how firms' can design their transition process from a cross-channel towards an omni-channel strategy. Theoretically, this study extends the understanding of the omni-channel strategy for the furniture retailers. Our findings follow the study of Bendoly *et al.* (2005) and affirm the assumption that informational and physical integrations are two important dimensions of channel integration for the omni-channel retailers. Therefore, this study advances the extant research of channel management in the omni-channel retail context. Practically, we further infer our findings that designing such a guideline for any other firm requires a profound analysis of the selected firm and its sales channels as well as an omni-channel design that corresponds to the firm's needs. The Austrian furniture retailer XXX Lutz was analyzed in the present study. However, the findings of the study cannot be generalized because the sample was restricted to a specific service sector. Although this study clearly has some limitations, we believe that this contribution represents a feasible starting point for XXX Lutz's transition from a cross-channel towards a successful omni-channel retailer.

REFERENCES

- Arora, S., & Sahney, S. (2018). Consumer's webrooming conduct: an explanation using the theory of planned behavior. *Asia Pacific Journal of Marketing and Logistics*, 30(4), 1040-1063.
- Beck, N., & Rygl, D. (2015). Categorization of multiple channel retailing in Multi-, Cross-, and Omni-Channel Retailing for retailers and retailing. *Journal of Retailing and Consumer Services*, 27, 170-178.
- Bendoly, E., Blocher, J. D., Bretthauer, K. M., Krishnan, S., & Venkataramanan, M. A. (2005). Online/in-store integration and customer retention. *Journal of Service Research*, 7(4), 313-327.
- Buzzvalue. (2018). Möbelhandel im Social Web: XXXLutz und IKEA top. Retrieved May 20, 2019, from BuzzValue.at | Social Media Marktforscher | Wien website: <https://www.buzzvalue.at/single-post/2018/04/04/M%C3%B6belhandel-im-Social-Web-XXXLutz-und-IKEA-top>
- Cochoy, F. (Ed.). (2012). The pencil, the trolley, and the smartphone: understanding the future of self-service retailing through its sociotechnical history. In *Nordic retail research: emerging diversity* (pp. 215–234). Göteborg: BAS.
- Frasquet, M., & Miquel, M. J. (2017). Do channel integration efforts pay-off in terms of online and offline customer loyalty? *International Journal of Retail & Distribution Management*, 45(7/8), 859-873.
- Gist. (2019). Multi-channel, Cross-channel, Omni-channel: What difference? Retrieved May 18, 2019, from Gist website: <https://getgist.com/multi-channel-cross-channel-omni-channel/>
- Lee, H. H., & Kim, J. (2010). Investigating dimensionality of multichannel retailer's cross-channel integration practices and effectiveness: shopping orientation and loyalty intention. *Journal of Marketing Channels*, 17(4), 281-312.
- Lewis, J., Whysall, P., & Foster, C. (2014). Drivers and Technology-Related Obstacles in Moving to Multichannel Retailing. *International Journal of Electronic Commerce*, 18(4), 43–68. <https://doi.org/10.2753/JEC1086-4415180402>
- Neslin, S. A., Grewal, D., Leghorn, R., Shankar, V., Teerling, M. L., Thomas, J. S., & Verhoef, P. C. (2006). Challenges and Opportunities in Multichannel Customer Management. In *Journal of Service Research* (Vol. 9, pp. 95–112). Retrieved from <http://journals.sagepub.com/doi/10.1177/1094670506293559>
- Picot-Coupey, K., Huré, E., & Piveteau, L. (2016). Channel design to enrich customers' shopping experiences: Synchronizing clicks with bricks in an omni-channel perspective – the Direct Optic case. *International Journal of Retail & Distribution Management*, 44(3), 336–368. <https://doi.org/10.1108/IJRD-04-2015-0056>
- Rigby, D. K. (2011). The Future of Shopping. *Harvard Business Review*, (December 2011). Retrieved from <https://hbr.org/2011/12/the-future-of-shopping>
- Salma, A., & Anil, K. (2015). Opportunities and Challenges of Omni-Channel Retailing in the Emerging Market. *Journal of Retail Management and Research*, 1(1), 1–16.
- Schmieder, U.-M. (2010). *Integrierte Multichannel-Kommunikation im Einzelhandel* (1. Aufl). Wiesbaden: Gabler.
- Van Baal, S. (2014). Should retailers harmonize marketing variables across their distribution channels? An investigation of cross-channel effects in multi-channel retailing. *Journal of Retailing and Consumer Services*, 21(6), 1038-1046.
- Verhoef, P. C., Kannan, P. K., & Inman, J. J. (2015). From multi-channel retailing to omni-channel retailing: introduction to the special issue on multi-channel retailing. *Journal of retailing*, 91(2), 174-181.
- XXX Lutz Group. (2019). Welcome to XXXLUTZ Group. Retrieved May 20, from <https://xxxlgroup.com/en/xxxlutz-group>.
- XXX Lutz. (2019). Möbel bequem online kaufen bei XXXLutz! XXXLutz. Retrieved May 20, from <https://www.xxxlutz.at/c/moebel>.
- Yumurtacı Hüseyinoğlu, I. Ö., Sorkun, M. F., & Börühan, G. (2018). Revealing the impact of operational logistics service quality on omni-channel capability. *Asia Pacific Journal of Marketing and Logistics*, 30(5), 1200-1221.