Nº 39

AD-MINISTER

UNIVERSIDAD EAFIT · MEDELLÍN - COLOMBIA · JULY - DECEMBER 2021 · ISSN 1692-0279 · E-ISSN: 2256-4322

UNIVERSIDAD EAFIT®

AD-MINISTER

AD-minister
Número 39 Julio – Diciembre de 2021
pp. 243
ISSN 1692-0279
e-ISSN 2256-4322
DOI: 10.17230/ad-minister
www.eafit.edu.co/ad-minister
Universidad EAFIT

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THE INFLUENCE OF VALUE CO-CREATION ON CUSTOMER LOYALTY, BEHAVIOURAL INTENTION, AND CUSTOMER SATISFACTION IN EMERGING MARKETS

LA INFLUENCIA DE LA CO-CREACIÓN DE VALOR EN LA LEALTAD DEL CLIENTE, LA INTENCIÓN DE COMPORTAMIENTO Y LA SATISFACCIÓN DEL CLIENTE EN LOS MERCADOS EMERGENTES

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JEL: I21, I23, M1

RECEIVED: 12/01/2021

MODIFIED: 25/04/2021

ACCEPTED: 21/05/2021

DOI: https://doi.org/10.17230/Ad-minister.39.1

ABSTRACT

One of the current major trends in the media industry is customer value co-creation. User participation can significantly affect news media organisations. This study examines the impact of value co-creation on the loyalty, satisfaction, and behavioural tendencies of media consumers, using a survey of users of My Fars news platform. The conceptual model of this study is developed and tested by using survey data from 283 users of the news campaign in Fars News and Structural Equation Modelling (SEM) is employed to simultaneously test the hypothesized relationships. The results show that user participation in value co-creation significantly affects their satisfaction, loyalty, and behavioural tendencies.

KEYWORDS

Customer value co-creation, Customer satisfaction, Behavioural tendencies, Customer behavioural loyalty, Customer attitudes loyalty.

RESUMEN

Una de las principales tendencias actuales en la industria de los medios de comunicación es la co-creación de valor para el cliente. La participación de los usuarios puede afectar significativamente a las organizaciones de medios informativos. Este estudio examina el impacto de la co-creación de valor en la lealtad, la satisfacción y las tendencias de comportamiento de los consumidores de medios de comunicación, utilizando una encuesta de los usuarios de la plataforma de noticias My Fars. El modelo conceptual de este estudio se desarrolla y prueba mediante el uso de datos de encuestas de 283 usuarios de la campaña de noticias en Fars News y se emplea el modelo de ecuaciones estructurales (MES o *SEM*, por sus siglas en inglés) para probar simultáneamente las relaciones hipotetizadas. Los resultados muestran que la participación de los usuarios en la co-creación de valor afecta significativamente su satisfacción, lealtad y tendencias de comportamiento.

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PALABRAS CLAVE
Co-creación de valor para el cliente, satisfacción del cliente, tendencias de comportamiento, lealtad del comportamiento del cliente, lealtad de las actitudes del cliente.

1. INTRODUCTION

Recent improvements in technology have not only influenced the management of businesses and business models but have also facilitated customers' access to information and data of firms (Opata et al., 2020) As a result, now more than ever, customers play an important role in creating value for firms (Galvagno & Dalli, 2014; Opata et al., 2020; Vargo & Lusch, 2016). In Goods Dominant Logic (GDL), the focus is on providing goods and services without heeding the tendencies and preferences of customers (Vargo & Lusch, 2008) while in the core concept of Service-Dominant Logic (SDL) customers are seen as the co-creators of value.

New media organizations and activists have faced challenges such as a change in user behaviour and increased user expectations in this regard. This has prompted them to identify new strategic approaches to achieve sustainable competitive advantage (Aboyee Ardakan & Ghanbary, 2020; Khajeheian et al., 2018) and meet the needs of their customers (Cossío-Silva et al., 2016; Shaw et al., 2011). The emergence of Service-Dominant Logic (SDL) has led to a change in the marketing paradigm and a new approach to the participation of customers in value creation (Rahmanseresht et al., 2018).

The concept of value co-creation focuses on participatory measures and the necessities of organizations and customers to develop solutions to meet the needs of customers and create value (Hamidi et al., 2020; Moghadamzadeh et al., 2020). This is considered a strategic issue since the formation of common values with customers requires planning, alignment, implementation and control of extensive measures at various levels of the organization, (Rahmanseresht et al., 2018).

News media users may participate in co-creation activities to increase their expected benefits by engaging in services that are more compatible with their needs (Prebensen et al., 2016). When users of news outlets receive a high level of value, they express positive behavioural tendencies (Khajeheian & Friedrichsen, 2017; Ghanbary et al., 2021). The perceived value encourages them to reuse the news media platform in the future, triggering a positive reaction to word of mouth and as a result, which plays a crucial role in customer loyalty (Ebrahimi et al., 2020).

In addition, value co-creation influences customer satisfaction, which is one of the primary aspects the managers should address. Managers try to satisfy the customers in order to gain a competitive advantage in the market (Cuong, 2020; Yu & Ramanathan, 2012). Customer satisfaction leads to enhanced opportunities of reusing news media, garnering positive and encouraging recommendations of the organization. Therefore, customer satisfaction triggers customer loyalty (Cuong & Long, 2020).

As a source of competitive advantage, customer loyalty is one of the best assets to an organization in terms of attitudes and behaviour. Therefore, loyalty in both terms is important for market knowledge development and the activities of the

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business. Customer value co-creation provides opportunities to build relationships that help foster loyalty and reduce the potential for customers to end their relationship with the company (Emami et al, 2021; Revilla-Camacho et al., 2015). From this perspective, customer loyalty is one way to help achieve value creation and therefore a competitive advantage.

Customer value co-creation, customer satisfaction and behavioural intention can also increase the level of user loyalty. In this study, the direct effect of these factors has been investigated. The relevance of this research lies in the impact of these factors on customer loyalty and its effects on achieving organizational success. A loyal customer reduces the cost of attracting and serving a new customer, contributing to a real competitive advantage (Cossío-Silva et al., 2016). This research aims to determine the impact of customer value co-creation, satisfaction, and behavioural intention on customer loyalty.

2. THEORETICAL DEVELOPMENT AND RESEARCH MODEL

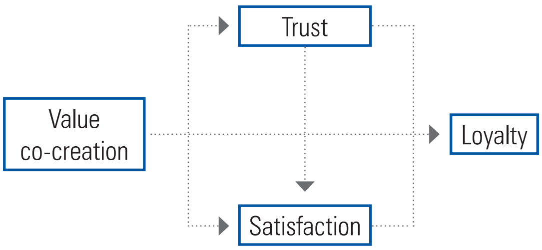
Nowadays, with increasing competition in the service sector, the role of customer loyalty has become more prominent than ever. Marketing includes development and attention to satisfaction, quality from the perspective of customers, loyalty, and effective communications with customers (Nemati & Khajeheian, 2018). As a result, it is integral that modern organizations have loyal customers (Meyer-Waarden, 2015). The role of loyalty is very important, since extensive interpersonal relations exist between service providers and customers in the service sector. Customer loyalty leads to increased market share, return on capital, and higher profitability for service organizations. Customer loyalty is one of the most inspiring and important factors influencing marketing success, particularly in the media industry.

Recent literature indicates a change in marketing philosophy. This change includes active customer participation in the value co-creation process (Moise et al., 2020). Today's customers are more informed, selective, educated and empowered, therefore they can exert great influence on the value generation for an organization (Vega-Vazquez et al., 2013). Customer value co-creation not only leads to improvements in innovation and identifying customer needs, but also it increases the level of customer loyalty and satisfaction (Moise et al., 2020).

For modern organizations, one part of harbouring customer loyalty involves ensuring that customers are satisfied (Lee & Connolly, 2010). Customer satisfaction is deemed as the main success factor in many organizations. In various studies, the relationship between customer satisfaction and word of mouth communication, loyalty, repurchasing, and increased profitability of organizations has been addressed (Sarkar Sengupta et al., 2015).

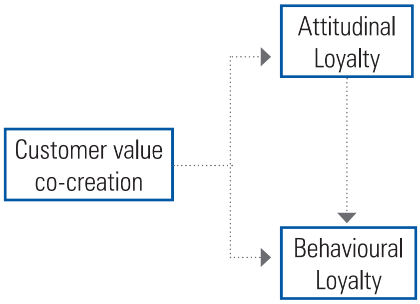
Moise et al. (2020) explored the connections between value co-creation and customers' trust, loyalty, and satisfaction. The results revealed that customer participation in the value co-creation process positively affected these three factors. Furthermore, trust and satisfaction were positively linked with customer loyalty (Figure 1).

Figure 1: model of (Moise et al., 2020)



Moise et al. (2020) considered customer loyalty a single variable, while according to the research of Cossío-Silva et al. (2016) there are two classes of loyalty: attitudinal loyalty and behavioural loyalty. Both dimensions of loyalty are affected by customer value co-creation (Figure 2).

Figure 2: Model of (Cossío-Silva et al., 2016)



The studies also suggest that besides customer value co-creation and satisfaction, behavioural intentions can be considered as an indicator of influence on loyalty. Behavioural intentions signal expectations about behaviours, particularly under certain contexts, and are defined as the predictors of behaviour in the future in terms of operational stance.

2.1. customer value co-creation and customer satisfaction and behaviour intention.

According to Prahalad & Ramaswamy (2004), traditionally customers were considered as passive elements of the value creation process inside the company which was finally received by the customers. However, the roles of customer and seller are very vague and the border between them has vanished in the contemporary context. Now, customers are considered as value creation resources who contribute to competitive

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advantage and have an important role in the improvement and innovation of products and services (Soltani et al., 2016). Value co-creation is a mutual process based on collaboration, synchronicity, and similarity that creates a new value both materially and symbolically (Gummesson et al., 2014).

In this respect, most organizations create value and engage with their customers to survive. By doing so, they are able to provide services that are fully adjusted to the needs of their customers (Vega-Vazquez et al., 2013). Additionally, if this value is generated with customers, it could enhance greater customer satisfaction (Moise et al., 2020). Several studies have highlighted that active consumer value co-creation improves their satisfaction (Grissemann & Stokburger-Sauer, 2012; Hollebeek & Rather, 2019; Mathis et al., 2016). Based on this, the following hypothesis was considered:

H1: Customer value co-creation positively affects customer satisfaction.

Behavioural intentions point to the performance of services that customers receive and whether customers are willing to increase or decrease their interaction with a particular news media platform (Huang et al., 2015). Behavioural intentions of customers are (Chen et al., 2013) behavioural that can be both desirable and undesirable (Emami and Klein, 2020; Fu et al., 2018). Customer value co-creation can boost customers' behavioural intentions. Therefore, researchers propose the following hypothesis:

H2: Customer value co-creation positively affects behavioural intention.

2.2. Customer satisfaction and behaviour intention

Research has shown that customer satisfaction greatly affects behavioural intention (Cuong, 2020; Xiao et al., 2020). Satisfied customers are likely to reuse previously received services (Ratnasari et al., 2020) as well as recommend them to others (Liao et al., 2017). When customers repeat a transaction or return to that service, it strengthens their behavioral intentions. Therefore customer satisfaction plays a significant and positive role in behavioural intention (Cuong, 2020; Wu, 2014; Chen et al., 2013). Researchers propose the following hypothesis:

H3: Customer satisfaction positively affects behavioural intention.

2.3. customer satisfaction, behaviour intention and customer loyalty (attitudinal and behavioural)

Customer loyalty is a complex term. The accepted definition of loyalty is where a customer is committed to return to the organization or company to reuse the service or repurchase a product. It can also include promoting its repeated use or purchase. Loyal customers are known to revisit the same news media agencies, recommend those organizations, and maintain an optimistic attitude toward them (Kandampully & Suhartanto, 2000).

According to established research, there are two types of loyalty (Baloglu, 2002; Kumar et al., 2006): behavioural and attitudinal. Behavioural loyalty refers to the actions and habits of a customer. Attitudinal loyalty is a personal viewpoint or opinion where different emotions make up the loyalty of consumers toward a product, a service, or a retailer (Cossío-Silva et al., 2016; Kursunluoglu, 2011).

Previous investigations have shown that customer satisfaction positively affects loyalty (Chen & Wang, 2016) and customer satisfaction has led to enhanced chances of reusing, recommending and providing encouragement to the organization (Han & Ryu, 2009; Minta, 2018).

Additionally, behaviour intentions have been thoroughly examined in marketing literature. In general, behavioural intentions are associated with customer loyalty (Alexandris et al., 2002; Chen et al., 2013), and customer loyalty is influenced by customer satisfaction (Chen et al., 2013). As customer behavioural intentions involve a large amount of decision-making, particularly in reuse decisions (White & Yu, 2005), customer behavioural intentions, are thus related to customer satisfaction and customer loyalty (Chen et al., 2013; Kang et al., 2004).

It is also suggested that two types of loyalties (attitudinal and behavioural) can be affected by customer satisfaction and behaviour intentions (Chen et al., 2013). Thus the following hypotheses are proposed:

H4: customer satisfaction positively affects customer attitudinal loyalty.

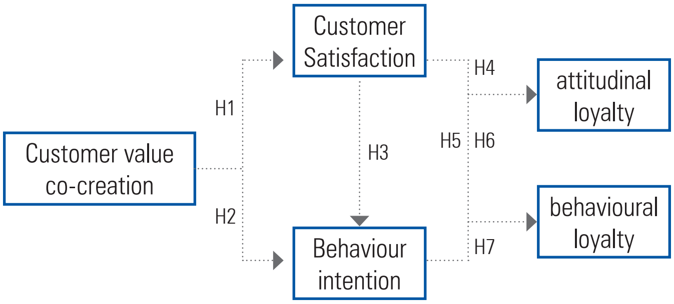
H5: customer satisfaction positively affects customer behavioural loyalty.

H6: behaviour intentions positively affect customer attitudinal loyalty.

H7: behaviour intentions positively affect customer behavioural loyalty.

Subsequently, the conceptual model of the present research is adopted from the models of Moise et al. (2020) and Cossío-Silva et al. (2016). This study analyses the role of customer value co-creation, customer satisfaction, and behavioural intention on customer loyalty. The conceptual model of this research is shown in Figure 3

Figure 3: The conceptual model



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3. METHODOLOGY

3.1. Population of study

The Fars News Agency, describing itself as "Iran's leading independent news agency", has been the subject of this study. This organization manages different social media accounts including Twitter, Facebook, Instagram, and Telegram, and they also have a mobile application to share the news and allow their customers to interact with the news agency.

"My Fars" is the new system of Fars News Agency that aims to make their content more targeted and relevant to their audience. The audience can select a wide range of content and news in scopes such as "request to address major issues", "request for appreciation", or "suggestion and criticism", or to "follow" or "publish". "My Fars" is an attempt by Fars News Agency to popularize media and understand the audience's interests. The technology used by My Fars provides opportunities for widespread participation of the users, leading to significant levels of customer co-creation. Thus, all users of "My Fars" are the population of this study.

3.2. Measures, reliability, and validity

To test the hypotheses of the model, an online survey was used. This online questionnaire was designed based on a 5-point Likert scale from absolutely disagree (1) to absolutely agree (5) and involves 29 questions. 17 questions were developed to measure the variable of Customer Value Co-Creation, and three questions for each of the other variables.

To examine the internal consistency reliability and convergent validity the PLS-SEM evaluation process was observed. In the section of measurement model indexes, the main criterion is convergent validity or AVE that should reach a critical level of 0.04 that indicates internal consistency or validity of the reflective measurement models. The results show the convergent validity is confirmed for all variables except customer value co-creation. In Table 1, values related to convergent validity, composite reliability, and Cronbach's alpha for each construct are presented. As can be seen, all Cronbach's alpha values of the variables are above 0.7 which amounts to acceptable reliability. Since the CR criterion is much better than Cronbach's alpha, the findings in Table 1 show that all CR values for all constructs are larger than 0.7 and show acceptable internal consistency (Hair et al., 2016).

The factor load shows the power of the relationship between the observable and latent variables. A path coefficient greater than 0.5 is desirable and the outer loadings that have a lower value of 0.5 should be deleted from the model (Hair et al., 2016).

Variance Inflation Factor (VIF) has been used to assess Multicollinearity among independent variables. For this factor, values lower than 2.5 are favourable (Hair et al., 2016). According to Table 2, there is no Multicollinearity among the independent variables.

Table 1: Measurement models and measures

Factors and items		outer loading	Cronbach's alpha	Composite Reliability	Average Variance Extracted (AVE)
Customer value co-creation	Q2	0.586	0.894	0.911	0.424
	Q3	0.582			
	Q4	0.657			
	Q6	0.583			
	Q7	0.718			
	Q8	0.680			
	Q9	0.600			
	Q10	0.738			
	Q11	0.748			
	Q12	0.732			
	Q13	0.672			
	Q14	0.593			
	Q15	0.618			
	Q16	0.561			
Customer satisfaction	Q18	0.872	0.806	0.884	0.718
	Q19	0.822			
	Q20	0.848			
Behaviour intention	Q21	0.883	0.791	0.877	0.705
	Q22	0.782			
	Q23	0.851			
Customer attitudinal loyalty	Q24	0.873	0.847	0.907	0.766
	Q25	0.855			
	Q26	0.896			
Customer behavioural loyalty	Q27	0.891	0.873	0.922	0.798

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Table 2: Multicollinearity with VIF

	Behaviour intention	Customer attitudinal loyalty	Customer behavioural loyalty	Customer satisfaction	Customer value co-creation
Behaviour intention		2.010	2.010		
Customer attitudinal loyalty					
Customer behavioural loyalty					
Customer satisfaction	1.547	2.010	2.010		
Customer value co-creation	1.547			1.000	

4. DATA ANALYSIS AND FINDING

According to Table 3, the highest density of age levels was 23 to 37 years old and 28 to 50 with a frequency of 108 and 38%. Female users with a frequency of 88 and 13% and male users with a frequency of 244 and 86% participated in this study. Bachelor's degree holders comprised the largest group of the participants compared to PhD holders (8%) followed by post-diploma degree. Half of the users of news media spent 2 to 6 hours on the internet per day (50%). The average time they spend on the news was less than 3 hours and most of them spent an average of between 1 and 3 hours following the news on the My Fars platform. The smartphone was the most popular electronic device used for following the news.

Structural Equations Modelling (SEM) employing Smart PLS was used to analyse the data and test the research hypotheses, this research is focused on the prediction of both independent and dependent variables and the conceptual model is researcher-based and exploratory. Therefore, in this study, PLS-SEM was used.

Indeed, the coefficient of determination shows the effect that a dependent variable has on an independent variable and a larger coefficient shows further explanation of the dependent variable by the independent variable or variables. According to Table 4, R^2 values for the indigenous constructs of the model are as follows: Customer satisfaction 0.354, Behaviour intention 0.639, Customer attitudinal loyalty 0.561 and Customer behavioural loyalty 0.482. A larger coefficient means that the variable or variables have explained a large amount of the dependent variable variance and the model indicates better GOF among the constructs.

Table 3: Demographics features

Features	Levels	Frequency	Percentage (%)
Gender	Male	244	86%
	Female	38	13%
Age	16–22 years	22	8%
	23–37 years	108	38%
	38–50 years	107	38%
	51 years or more	43	15%
Level of education	Diploma and less	36	13%
	Post diploma	28	10%
	Bachelor	107	38%
	Master	89	31%
	PhD	23	8%
The average time use from the internet (per day)	less than 2h	53	19%
	2-6 h	142	50%
	6-10 h	57	20%
	More than 10 h	29	10%
The average spending time for following news (per day)	less than 1h	104	37%
	1-3 h	122	43%
	3-5 h	32	11%
	More than 5 h	22	8%
The average time for using My Fars (per day)	less than 1h	82	29%
	1-3 h	109	39%
	3-5 h	36	13%
	More than 5 h	53	19%
The devices that usually use to follow the news	Mobile	231	82%
	Tablet	8	3%
	Laptop	13	5%
	Computer	29	10%

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Figure 4 and Figure 5 show path coefficients and T values. The index Q^2 was used to predict the power of the model that consists of the construct of cross-validated redundancy (CC-Red) and cross-validated communality (CC-Com). A value that approaches 1 represents the most conducive response (Khajeheian & Ebrahimi, 2020). Also measure SRMR has been implied to assess the whole model, including internal and external structural models, that values lower than 0.08 are considered as favourable (Hair et al., 2016). In this research, the value of SRMR in the Estimated model and Saturated model are reported as 0.07.

Figure 4: Output of Smart PLS 3 for path coefficient

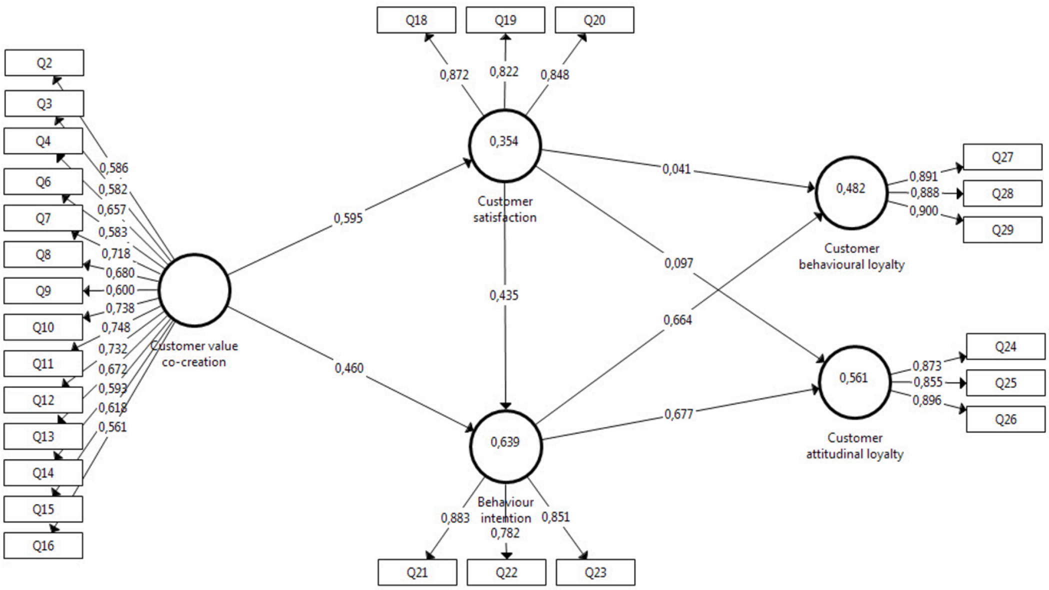

Figure 5: Output of SmartPLS 3 for t-statistics

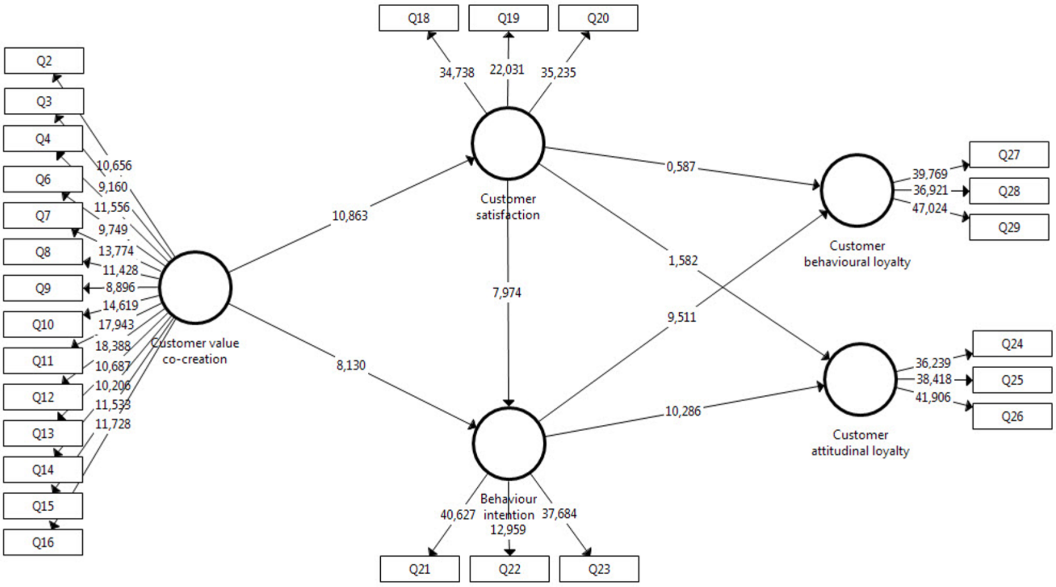

Table 4: Assessment of structural model indicators

	R Square	R Square Adjusted	CC-Red	CC-Com
Behaviour intention	0.639	0.637	0.439	0.400
Customer attitudinal loyalty	0.561	0.558	0.417	0.506
Customer behavioural loyalty	0.482	0.478	0.372	0.561
Customer satisfaction	0.354	0.351	0.239	0.420
Customer value co-creation	---	---	---	0.331

Hypotheses 1 to 5 were considered to test the direct effect. Table 5 shows all these hypotheses except H4 and H5 is confirmed at the 95% confidence level.

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Table 5: Results of research hypotheses

Hypotheses	β	SD	t-statistics	p-value
Behaviour intention -> Customer attitudinal loyalty	0.677	0.066	10.286	0.000
Behaviour intention -> Customer behavioural loyalty	0.664	0.070	9.511	0.000
Customer satisfaction -> Behaviour intention	0.435	0.055	7.974	0.000
Customer satisfaction -> Customer attitudinal loyalty	0.097	0.061	1.582	0.114
Customer satisfaction -> Customer behavioural loyalty	0.042	0.070	0.587	0.558
Customer value co-creation -> Behaviour intention	0.460	0.057	8.130	0.000
Customer value co-creation -> Customer satisfaction	0.595	0.055	10.863	0.000

5. DISCUSSION AND CONCLUSIONS

Loyalty plays a key role in an organization's success and is recognized as an important and determining factor in its growth and profitability. This study explores the relationship between customer co-creation and loyalty, customer satisfaction and behavioural tendencies. Based on the above-mentioned results of the research, the following findings are presented:

Hypothesis 1 that pertains to the relationship between customer value co-creation and customer satisfaction and hypothesis 6 that test the relationship between behavioural intentions and customer attitudinal loyalty have been confirmed as the strongest hypotheses (H1: $\beta = 0.0595$, $t = 10.863$, $p = 0.000$ and H6: $\beta = 0.0677$, $t = 10.286$, $p = 0.000$).

Therefore according to the research findings, the construct of value co-creation could influence the construct of customer satisfaction dramatically. This means higher participation and interaction of customers boost customer satisfaction. This interaction and participation can be shaped during the process of news production and suggesting ideas for campaigns. That is to say, the users of news media get engaged in the process of producing news. In other words, a user-based, participatory approach gets underway through which strong user interaction is shaped which in turn gives rise to new demands and develop the services using new insights. Similarly, behavioural intentions can play an important role in attitudinal loyalty.

Based on the analysis, hypotheses 2,3 and 7 have been confirmed strongly (H2: $\beta = 0.460$, $t = 8.130$, $p = 0.000$; H3: $\beta = 0.435$, $t = 7.974$, $p = 0.000$; H7: $\beta = 0.664$, $t = 9.511$, $p = 0.000$), respectively showing the respective effects of customer value co-creation on behavioural intentions, customer satisfaction on behavioural intentions, and behavioural intentions on behavioural customer loyalty.

Through interacting with news platforms to select news based on their interests, users create the values and according to the second hypothesis which has already been confirmed such value co-creation can influence behavioural intentions. According to H3, the satisfaction that triggers a behaviour has been very effective in shaping the behavioural intentions and can enhance them. In hypothesis 7, the relationship confirms that the intention of the past behaviour largely determines effective behaviours and brings about attitudinal loyalty.

Finally, no corroboration is found in hypotheses 5 and 6. Therefore, the results do not confirm the assumption that customer satisfaction has a direct effect on both types of loyalty towards the organization, especially in the news industry. While most of the researchers claimed that customer satisfaction was significantly related to customer loyalty (Jiang et al., 2018; Hultman et al., 2015; Prayag & Ryan, 2012), the results of this study show that there is no relationship between satisfaction and loyalty of customers. This is an important finding, as it might imply that the potential for news organizations to increase both attitudinal and behavioural loyalty among their target audience does not depend substantially on users' satisfaction. A plausible explanation for this finding could come from the differences between the natures of news organizations and other companies.

According to the results of the analysis in this study, it is recommended that news agencies produce news stories based on interaction with their users. This can be implemented by receiving suggestions, comments, and criticisms from the users on the relevant platforms to explore values users care about. Such value co-creation can in turn improve customer satisfaction, behavioural intentions, and customer loyalty.

5.1. Limitations and Future Research

There are a few limitations to the current research that can be lifted in future studies. Firstly, this study was conducted in a particular context with certain restrictions in co-creation. Thus, co-creation and loyalty that are under-researched in other industries should be taken into consideration. Also, this research constricted its perception of co-creation to sharing the news content on the news media platform. However, co-creation carries a broader meaning and is not limited to sharing the content and

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ideas in the news platform. This issue can be considered in future research. Finally, this study uses cross-sectional data from Iranian users for a specific news media. Thus, using a longitudinal research design is recommended for further research to better ascertain the nature of and the relationships among constructs.

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HOW GENDER AND AGE CAN AFFECT CONSUMER PURCHASE BEHAVIOR? EVIDENCE FROM A MICROECONOMIC PERSPECTIVE FROM HUNGARY

¿CÓMO EL GÉNERO Y LA EDAD PUEDEN AFECTAR EL COMPORTAMIENTO DE COMPRA DEL CONSUMIDOR? EVIDENCIA DESDE UNA PERSPECTIVA MICROECONÓMICA DE HUNGRÍA

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RECEIVED: 02/02/2021

MODIFIED: 19/05/2021

ACCEPTED: 04/06/2021

DOI: https://doi.org/10.17230/Ad-minister.39.2

ABSTRACT

The present study aimed to investigate the effect of demographic variables of gender and age on online consumer purchase behavior (CPB) on Facebook in Hungary. The statistical population of the present study consists of Facebook users in Hungary, including Hungarian natives, foreigners residing in this country including students. A sample of 433 online consumers in different age groups was surveyed. The questionnaire was shared via an online link on the Facebook platform and also on various channels. Welch's t-test was used to examine the gender variable, and Welch and Brown-Forsythe test was used to examine the age variable. The results showed that there was a significant difference between CPB in all age groups and the age group of over 50 years on Facebook. This important result emphasized the importance and impact of social networks as marketing channels on young people. Another important point was the difference between the purchase behaviors of male and female consumers. The results from this research can have implications for businesses in developing their competitive advantages and adopting proper approaches in advertising and marketing campaigns based on the socio-demographic characteristics of people.

KEYWORDS

Consumer purchase behavior, Gender, Age, Facebook, Social networks marketing

RESUMEN

El presente estudio tuvo como objetivo investigar el efecto de las variables demográficas de género y edad en el comportamiento de compra del consumidor *on-line* (CPB, por sus siglas en inglés) en Facebook en Hungría. La población estadística del presente estudio consiste en usuarios de Facebook en Hungría, incluidos los nativos húngaros y los extranjeros que residen en este país, incluidos los estudiantes.

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Se encuestó a una muestra de 433 consumidores en línea en diferentes grupos de edad. El cuestionario se compartió a través de un enlace en línea en la plataforma de Facebook y también en varios canales. Se utilizó la prueba t de Welch para examinar la variable de género, y la prueba de Welch y Brown-Forsythe, para examinar la variable de edad. Los resultados mostraron que hubo una diferencia significativa entre el CPB en todos los grupos de edad y el grupo de más de 50 años en Facebook. Este importante resultado enfatizó la importancia y el impacto de las redes sociales como canales de comercialización en los jóvenes. Otro punto importante fue la diferencia entre los comportamientos de compra de los consumidores masculinos y femeninos. Los resultados de esta investigación pueden tener implicaciones para que las empresas desarrollen sus ventajas competitivas y adopten enfoques adecuados en las campañas de publicidad y *marketing* en función de las características sociodemográficas de las personas.

PALABRAS CLAVE

Comportamiento de compra del consumidor, Género, Edad, Facebook, *Marketing* en redes sociales

1. INTRODUCTION

Many studies show that in today's competitive world, the success of companies in maintaining, retaining and communicating with customers, and e-business can meet the explicit and implicit needs of the customers (Naeem, 2019a; Roshandel Arbatani et al., 2019). Due to increasing pricing levels and material costs over the years, enterprises have intended to lower their financial costs via Internet marketing, through which renting cost, facility setup cost, and manpower cost can be saved, and advertising cost is lowered for increasing more potential customers (Jensen & Sund, 2020; Nemati & Khajeheian, 2018). In terms of logistics, electronic commerce shortens the delivery, decreases the procurement cost, decreases unconfirmed orders, increases the control ability for the supply chain, digitalizes the operations of transaction, transportation, storehouse, and payments to analyze customers' procurement data showing the precise prediction about the required amount of supply, etc. Hence, Internet marketing has become a market territory for which each enterprise competes (Liu et al., 2013). E-commerce can be useful for a variety of reasons. For example, it provides easy access to products that may not be accessible without the Internet. Furthermore, e-commerce is an easy way to do transactions. Although it is sometimes more vulnerable than its traditional form, it can largely meet the needs consumers (Ma et al., 2015). The increasing acceptance of social media along with rapid changes in CPB is due to the fact that there are 2.789 billion social media users around the world with penetration of approximately 37% (Kemp, 2017; Shah et al., 2019).

Understanding customer purchasing behavior is among the priorities of marketers as well as researchers; Moon (2004) states that one of the fundamental issues in purchasing behavior is the way customers develop, adopt, and use decision-making strategies (Shah et al., 2019). We will gain knowledge and understand the customer behavior by investigating the factors that affect consumer behavior and looking into the impact of each of these factors on customers' behavior. Accordingly, marketers will be able to offer a product that is more consistent with the needs and preferences of consumers (Kotler & Keller, 2012). In general, various parameters influence customers' tendency to purchase a product or commodity. Online CPB,

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like the traditional purchase behavior model, depends on a series of cultural, social, personal, psychological factors, etc., among which age and gender have been considered in various studies (Estiri et al., 2018; Naeem, 2019b; Nejati et al., 2011) .

Munar (2012) claims that one of the main motivations for using the Internet is online social media. Social media do not only include popular sites such as Facebook, YouTube and Twitter, but also wikis, blogs, forums and podcasts (Escobar-Rodríguez et al., 2017). Social networks have a variety of functions in social life, such as forming different social, political, cultural groups, etc., to achieve the goals of its members (Khobzi et al., 2019). According to Comscore Incorporation (2011), Facebook can be considered the most widely used social network, with 1.4 billion active users as of December 2014 (Escobar-Rodríguez et al., 2017). Also, Facebook has had one of the strongest interactive platforms for brands, with more than 90 million businesses over the last three months of 2018. This platform includes data from a large number of online businesses (Dhaoui & Webster, 2021). Facebook is a medium that is facilitating global interaction and sharing ideas and experiences for its users (Sabbar & Matheson, 2019; Zarea et al., 2020). According to Brown (2009), Facebook is a social media platform that is, in fact, a "Web based site which brings different people together in a virtual platform and ensures a deeper social interaction, stronger community and implementation of cooperation projects". (Kahraman, 2010) defines Facebook as "the online platform that people use to share their ideas, experience, and perspectives and communicate with each other". Millions of people are using Facebook daily. The vast use of Facebook around the globe has turned it into a new and important advertising platform, where businesses place their ads to reach their prospective customers. This is probably because Facebook allows businesses to target specific customer and promoting their product or services through effective advertisements. As Vahl (2011) argues, Facebook is facilitating the manufacturers and service providers' access to customers of specific age group and interest. Growing Facebook-based advertising is perhaps an indication that it is becoming an important source of business presentation, and the firms are taking Facebook advertisement as a useful strategy to attract customers. Just in a few years, it has become a part of the promotional mix of the firms to create awareness in target areas and influence customers' mind. So in the current business environment, Facebook advertisements is playing a significant role to convey a business message to the target audience (Rehman et al., 2014). If social networks have multiple and active users, they will be a good platform for marketing and advertising various products and communication with customers (Dal Zotto & Omidi, 2020; Moro & Rita, 2018; Omar Bali et al., 2020; Sadat Mirzadeh et al., 2017). Thus, Facebook, in general, should be considered as a major platform for communication and building relationships with consumers, since it has the largest number of social network users and allows direct communication with consumers (Lee et al., 2021).

Generally speaking, the Internet offers enterprises a growing market with limitless opportunities that they can tap into by providing consumers with online shopping services. While enterprises can efficiently and economically conduct their marketing activities through the Internet, a challenge in this massive and growing market is identifying potential consumers through appropriate marketing planning and market segmentation (Liu et al., 2013). It is important to note that knowing the impact of demographic factors such as age and gender on consumer shopping behavior allows the online retailer to create stronger and more memorable ads. Also, given the fact that in Facebook, users can be selected in a completely targeted way, through examining consumer purchasing behavior and other factors affecting it, online sellers can offer their ads to the target community effectively, and increase the number of their actual customers and lower their advertising costs.

To assess the purchase behavior of consumers and investigate the effect of age and gender of consumer among Hungarian Facebook users, the study selected a sample of 433 online consumers in different age groups to conduct the research. The study is expected to offer new information in this particular knowledge area. In the second part of study, the focus is on a literature review related to the topic. The third section provides information related to the methodology of the study. In the fourth section, the results of the statistical analysis of the study are presented. The conclusion part is focused on important notes, implications, some limitations, and suggestions for future researches.

2. LITERATURE REVIEW

The issue of CPB is crucial in the marketing literature. Consumer behavior includes all aspects of purchase and the use and disposal of products and services. According to Kotler & Keller (2012) “CPB is the study of how individuals or groups buy, use and dispose of goods, services, ideas and experiences to satisfy their needs and wants”. When it comes to consumers’ buying decision behavior, it is important to understand the different types of consumers with different buying decision behaviors based on the level of involvement and the ability to perceive significant differences among the brands. Hawkins & Mothersbaugh (2010) define the term buying involvement as the degree of interest a consumer possesses when it comes to buying a product or service. Kotler & Armstrong (2018) describe Assael’s consumers’ buying decision behavior types’ model as following:

1. Complex buying behavior - refers to consumers’ high purchase involvement and their ability to perceive significant differences among brands.
2. Dissonance-reducing buying behavior - refers to consumers’ high purchase involvement and their inability to perceive significant differences among brands.
3. Habitual buying behavior - refers to consumers’ low purchase involvement and their inability to perceive significant differences among brands.
4. Variety-seeking buying behavior - refers to consumers’ low purchase involvement and the ability to perceive significant differences among brands (Palalic et al., 2020).

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CPB has been influenced by the emergence of information and communication technology (ICT) and the spread of social media (Fauser et al., 2011; Frutos et al., 2014; Kotler & Keller, 2012; X. Wang et al., 2019). Early models of consumer response to marketing efforts for purchasing activity focused merely on attracting customer attention, but interaction with business and social networks is nowadays a key component to grow and succeed in global markets (Gonda et al., 2020; Hossain, 2019).

Dahlqvist and Wiklund (2012) states that personal behavior theories such as personality traits, theory of reasoned action, theory of planned behavior and personality traits are focused on analyzing, motivating, guide and change the attitude of consumers using social networking platforms. These theories are helpful to learn how companies can engage existing customers as well as attract new customers by analyzing their personality traits and behavioral aspects. Ngai et al. (2015) and Kim and Ko (2012) claim that social theories are more useful to identify important social factors that can enhance collective actions and positive social image for services providing organizations. Based on social factors, managers can develop marketing strategies to enhance relationship building, social networks, social image, social trust and social influence. Social behavior theories are more important in the context of social media marketing. For example, social capital theory highlights how social relations or social connections with consumers can enhance the effectiveness of customer relationship management. Para-social interaction theory highlights the importance of opinion leaders and celebrities that are involved in social media marketing. These celebrities can share positive word of mouth, endorsement and positive information on the offered services, and their followers can show trust and a greater level of intention to purchase (Sabbar & Hyun, 2016). This study is performed based on social interaction and social influence theory. Social interaction theory is focused on constructing affection and interaction among social groups. By using this theory, organizations can increase the interaction with internet users or consumers and can engage consumers to generate reviews to improve service quality. Social interaction theory indicates the importance of various affections such as positive sentiment, attraction and liking. Social influence theory develops the concept of how people opinions, thoughts, emotions and intention to purchase can be affected by family, friends, celebrities, opinion leaders or any other credible sources. Social influence can be analyzed in form of peer pressure, conformity, obedience, persuasion, socialization, leadership, marketing and sales. It is also found that people prefer to gather information in the context of product reviews and experiences about any brand before purchase. If people express positive feelings, emotional attachment, observations, and thoughts, other social media users can also be influenced and may intend to purchase that particular service. Both theories describe the importance of adopting social networking technologies to gather information regarding customers' need, expectations, demands, and experiences to enhance service quality and purchase intention (Naeem, 2019b).

Electronic commerce (or e-commerce) carries out traditional commercial activities through the new medium of the Internet. E-commerce can be defined as any commercial transaction conducted in an electronic format. Kalakota and Whinston (1997) suggested that e-commerce is the use of the Internet for purchasing, selling or trading products and services. The aim is to reduce costs, shorten product lifecycles, speed up customer feedback and improve the quality of service. E-commerce is the process of online transactions between individuals and enterprises. These include Business-to-Business (B2B) transactions, Business-to-Consumer (B2C) retail sales (or e-retail) and Consumer-to-Consumer (C2C) transactions (Liu et al., 2013).

In the wake of the technological revolution that is happening around the globe, social media has flourished in every sphere of communication and as a result of this, there has been innovative ways of communicating among people. The advent of social media has influenced the way companies forge links with their customers and the services offered by social media are not only high tech but also fast, effective and convenient. They are spontaneous and visual and can be broadcasted almost in any part of the world as long as the Internet is existent. As users of these social media, prospective consumers get involved in groups with particular interests and this peculiarity enables effortless marketing strategies (Kahle & Valette-Florence, 2012.).

Unlike the one-way information transmission of traditional media, social media is a two-way communication tool that promotes conversation among users. While traditional media allows for vertical flow of content from powerful conglomerates to isolated consumers, social media has paved the way for information to flow horizontally among consumers. Consumers identify social media as a more trustworthy source of information compared to the traditional marketing communication tools; this allows organizations to integrate social media into their existing marketing mix, not only to communicate with customers, but also to get feedback (Shah et al., 2019).

Interaction with business and social networks can provide the necessary conditions for improving the performance of companies in international markets by providing the required knowledge to network members (Emami et al., 2011; Horst & Hitters, 2020). Expanding customer access to social networks and increasing the time spent on such platforms is an opportunity for organizations to improve their services and products (Ma et al., 2015) and enhance customer relationships to understand their needs better (Demmers et al., 2020). The results of research conducted by Prasad et al. (2017) suggest that the use of social media and electronic advertising expressed by customers had a positive impact on CPB. More attention has been paid to investment and entrepreneurship through social networks (Ebrahimi, Kot & et al., 2020; Tajeddin et al., 2018).

Nowadays, increasing investment of companies in social networks, especially Facebook, has become a reality. For example, (Gamboa & Gonçalves, 2014)examined Zara brand fans on Facebook and found that Facebook enhances relationships that increase loyalty through trust, customer satisfaction, perceived value, and commitment. It is a new opportunity for marketing managers to achieve customer

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loyalty. Relevant and specific information is obtained directly from consumers who have purchased and used the product. Thus, online consumer surveys are widely used to search for and find product information (Wang & Sun, 2010). This information is more convincing and reliable than the information generated by the seller (Timoshenko & Hauser, 2019). Previous studies have indicated that online reviews on social networks, including Facebook, greatly influence consumer decision-making processes and behavioral goals (Broeder & van Hout, 2019).

2.1. The effect of gender on CPB

Gender differences can affect consumer decision-making approaches and the difficulty of decision-making. Gender differences also affect behaviors and attitudes. There are also differences in the responses of males and females to advertising in marketing (Haji & Stock, 2021). Males and females have different paths in data processing and in evaluating their services. Females are more likely than males to have negative evaluations of services, since females consider more value for negative information (Emami & Naderi, 2018; Pinar et al., 2017).

Moderating the gender effect can be explained according to social role theory and evolutionary psychology. Studies indicate that males show a higher tendency to conscientiousness and being systemic and take more risks than females (Rahman et al., 2018), since these individuals are socially expected to behave in this way (social role theory), and this adaptive behavior in the natural selection process designates special characteristic advantages to individuals (evolutionary psychology). Psychological studies conducted over the last years have identified different gender differences that are potentially related to e-consumer behavior. However, little research has been conducted on the effect of these differences on e-consumer behavior (Molinillo et al., 2021; Oláh et al., 2018).

The results of a study conducted by Sandström et al. (2008) show that males use electronic purchase sites that are highly hierarchical easier than females. In general, the results of studies indicate that considering male and female websites can be more successful in satisfying e-consumers (Kim et al., 2019). The marketing literature has long been interested in evaluating gender differences in the use of the Internet and the use of Facebook and other platform (Ghanbary at al., 2021). For example, Gefen and Straub (1997) found significant differences between male and female perceptions of email use. Similarly,Venkatesh & Morris (2000) found differences between males and females in the use of software in the workplace. Ono & Zavodny (2003)carried out a research study and found a significant relationship between males and females in using the Internet. Some research shows that male users spent more time using Facebook in comparison with female users (Escobar-Rodríguez et al., 2017).

H1: *Gender has a significant effect on consumer purchase behavior in an online shopping context*

2.2. The effect of age on CPB

Age is a crucial marketing phenomenon since it affects people consumption patterns and is associated with several important social and psychological factors (such as family size, income and self-knowledge)(Punj, 2011). Service providers should consider age and gender as important factors in designing their services (Dabija et al., 2017; Leong et al., 2013; Nathan et al., 2020; Rather & Hollebeek, 2021). In this regard,(Vahl, 2011) states that Facebook facilitates the efforts of manufacturers and service providers to reach customers of specific age groups and interests. Studies indicate that older consumers show a lower tendency to search for new information. The age component modulates the relationship between product satisfaction and loyalty, so that this relationship is stronger for older consumers (Tiruwa et al., 2018).

Jackson et al. (2011) believe that people born in the same generation usually have the same behavioral patterns because of shared experiences that influenced their childhood. For example, Taylor & Keeter (2010) categorized different age groups into five categories ranging from 22 years old to over 74 years old. Using this category, researchers such as (Cabral, 2011) have stated that social media is the main priority for the age group between 22 and 33 years old, and it is almost impossible to separate them from social networks (Darbha & Rao, 2016). Almost 63% of young people like or follow brands on Facebook (Khalaf Ahmad, 2016). A survey to know how the younger generation makes decisions showed that family, friends, and digital media play a major role in their decision-making process (Haji & Stock, 2021).

H2: *Age groups have a significant effect on consumer purchase behavior in an online shopping context*

3. METHODOLOGY

In the present study, a 10-item CPB questionnaire developed by (Turban et al., 2008) was used (Appendix 1). It was adapted and modified according to the objectives of this study. Also, a pre-test was performed to examine the accuracy of the items in the statistical population of the study. Also, a 7-point Likert scale from 1 = strongly disagree to 7 = strongly agree was used. The verification of the ICC coefficient was done regarding consistency and absolute agreement to confirm the questionnaire's content validity (Ebrahimi et al., 2021; Janavi et al., 2021; Khajeheian & Ebrahimi, 2020).

The statistical population of the present study consists of Facebook users in Hungary, including Hungarian natives, foreigners residing in this country or foreign students. In fact, the statistical population of the present study consists of all users, including online consumers. The research respondents were asked to answer questions if they had at least once online purchase experience via Facebook marketing channels. A sample of 433 online consumers in different age groups was surveyed. The questionnaire was shared via an online link on the Facebook platform and on various channels. Also, a pilot study as a common method was conducted

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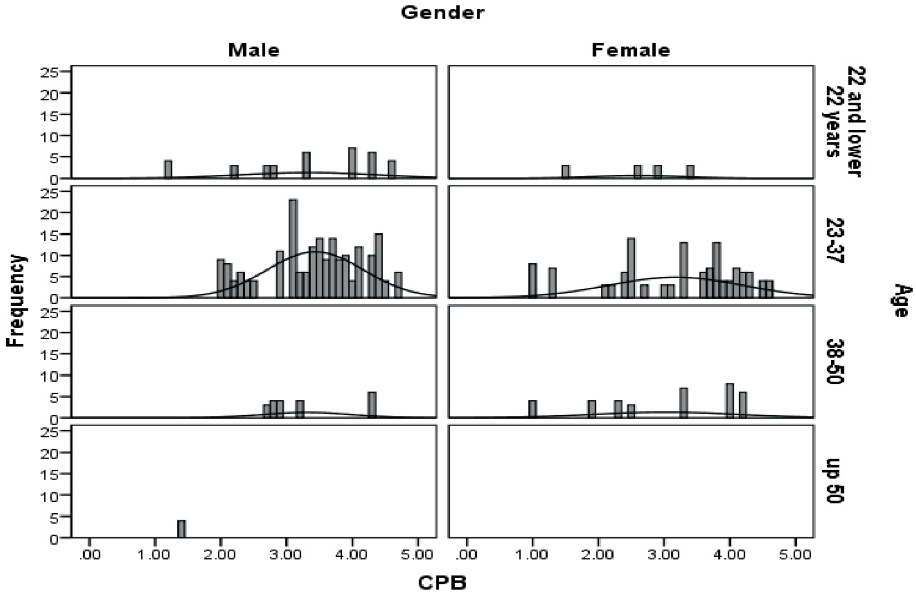
(Ebrahimi et al., 2016) to confirm the content validity of CPB items. Cronbach's alpha coefficient was also used to confirm the reliability of the research questionnaire. The value of this coefficient was greater than 0.7 (Hair et al., 2017; Salamzadeh et al., 2021; Solatianaghizi et al., 2017; Vafaei et al., 2019), indicating the internal consistency of CPB questionnaire items. Also, the AVE index value is greater than 0.5 (Ebrahimi, Hajmohammadi, et al., 2020; Moghadamzadeh et al., 2020; Sanchez, 2013), indicating the convergent validity of the CPB questionnaire items.

4. RESULTS

The present study focuses on the demographic variables of gender and age. In fact, demographic variables can show small differences and details in online consumer behavior. In the present study, 60.3% (261 respondents) of the respondents were male, and 39.7% (172 respondents) of the respondents were female. The highest number of respondents was in the age range of 23 to 37 years (74.8%), indicating that young people have a higher interest in the Facebook platform in Hungary. In addition, 172 respondents (39.7%) had a master's degree, 29.8% of respondents had a bachelor's degree, indicating educated people welcome the Facebook platform more. Moreover, most respondents (33.3%) reported that they spend 1 to 2 hours per day on Facebook, and 88.2% of respondents reported that they spend at least 1 hour per day on sales and search channels for purchasing on Facebook.

It should be noted that the test of homogeneity of variance was examined. According to the results of Levene's test for equality of variance and the value of sig <0, inequality of variance is considered for both variables of gender and age. Welch's t-test was used to investigate the gender variable and Welch and Brown-Forsythe test was used to investigate the age variable. Figure (1) emphasizes the inequality of variance in two groups of gender and age.

Fig 1. Frequency of variables with paying attention to homogeneity



The gender variable was first examined. According to the results of Table (1), the sig value is less than 0.05, and the t-value is greater than 1.96, indicating that the behavior of male and female consumers are significantly different at a significant level of 95%. Therefore, the first hypothesis of the research is confirmed, and it can be stated that gender has a significant effect on CPB in an online shopping context.

Table 1. Results of Welch's t-test for CPB

Gender	N	Mean	SD	Levene's test for equality of variances		Welch's t-test	
				F	Sig	t	df
Male	261	3.378	0.813	17.352	0.000	3.011**	308.402
Female	172	3.099	1.020				

Note : SD, Std. Deviation; t>1.96 at * p<0.05; t>2.58 at **p<0.01; t>3.29 at ***p<0.001; two-tailed test

Regarding the second hypothesis of the study, robust tests of equality of means were used due to the inequality of variances. The results of Welch and Brown-Forsythe test showed that the second hypothesis of the research is confirmed, and it can be stated that age groups have a significant effect on CPB in an online shopping context.

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Also, according to Table (2), post hoc tests were used for multiple comparisons between different age groups based on Tamhane post hoc test.

Table 2. Multiple comparisons based on Tamhane post hoc test

Age group (I)	Age group (II)	Mean difference	SD	Sig	CI 95%
22 and below 22	23 to 37	-0.185	0.156	0.806	[-0.611, 0.240]
	38 to 50	0.023	0.194	1.000	[-0.500, 0.546]
	Over 50	1.747	0.148	0.000*	[1.339, 2.156]
23 to 37	22 and below 22	0.185	0.156	0.806	[-0.240, 0.611]
	38 to 50	0.209	0.134	0.552	[-0.155, 0.573]
	Over 50	1.933	0.047	0.000*	[1.806, 2.060]
38 to 50	22 and below 22	-0.023	0.194	1.000	[-0.546, 0.500]
	23 to 37	-0.209	0.134	0.552	[-0.573, 0.155]
	Over 50	1.724	0.126	0.000*	[1.380, 2.068]
Over 50	22 and below 22	-1.747	0.148	0.000*	[-2.156, -1.339]
	23 to 37	-1.933	0.047	0.000*	[-2.060, -1.806]
	38 to 50	-1.724	0.126	0.000*	[-2.068, -1.380]

Note : SD, Std. Deviation; CI, Confidence Intervals; * Sig <0.05 significant at 95% CI; two-tailed test

The results of Table (2) show that the CPB in the age group of 22 and below 22 years old is significantly different from that in the age group of more than 50 years old on the Facebook platform. The results also showed that the purchase behavior of Hungarian consumers in the age groups of 23 to 37 years old and 38 to 50 years old was significantly different from those in the age group of more than 50 years old. In fact, the CPB in all age groups shows a significant difference between all age groups and the age group of over 50 years old on the Facebook platform.

5. CONCLUSION

The present study emphasized the importance of demographic variables of gender and age in the purchase behavior of Hungarian on the Facebook platform. The results revealed that the purchase behavior of young consumers had a significant difference with that of the age group of more than 50 years old. This result is in keeping with Joines et al.,(2003), Korgaonkar and Wolin, (1999), Roy Dholakia and Uusitalo (2002). They also show that young consumers are more likely to shop products online than older consumers. The results are contrary to the results of a study by Sorce et al., (2005), who found that age did not impact consumer purchase behavior. This result emphasizes the importance and impact of social networks as marketing channels on young people. In fact, young consumers spend much time on social networks and different platforms and show a higher tendency for online shopping. In contrast, the age group over 50 years old is more conservative in online shopping. So the result implies that different marketing strategies and approaches are necessary for the different consumer age segments in E-Commerce (Nemati & Khajeheian, 2018). For example, older people should be induced to get online in the first place by introducing technology and teaching them how to use it. Also, Younger consumers need enticement to repurchase.

Another important point was the difference in the purchase behaviors of male and female consumers. This is consistent with (Lin et al., 2019) empirical study that shows that men and women are different, and therefore, to influence their purchase intentions via their attitudes, men are more affected by the interactivity of a website than women. In contrast, women are more affected by vividness, diagnosticity of the information, and perceived risk (Emami, 2017). This is opposite to the result of a study by (Modahl, 1999), who found that the gender of people did not impact consumer purchase behavior. Since gender influences consumer online shopping behavior, and given that the study found men shop online more often than women, it is suggested that online sellers find the factors that prevent female consumers from translating their shopping and browsing into actual purchasing. For example, if the security of online transactions is the problem, online sellers should offer more secure transaction methods for female consumers. If the website content is the problem and products need to be explained in more detail, online sellers should consider providing more detailed explanations for female consumers. Overall, marketing channels should pay particular attention to this issue and select different approaches and advertisements in their marketing according to the gender of people.

Although the results are mostly statistically significant, there are several limitations to this study.

- One of the limitations of this study was data collection during the Covid-19 outbreak.
- Given that the research was conducted in Hungary, this should be considered as a limitation, and it should be noted that it has restricted the ability to generalize the result for Facebook users in other countries.
- Self-reports are used to measure behavior. According toFeldman & Lynch (1988), Self-reports may create self-generated validity and thus inflated causal linkages.
- Users' responses may not be actual perceptions, but rather the subject's report of their perception.
- Data used in this paper are derived from a questionnaire administered at a single point in time; therefore, the variables are not measured over time.

The question of what are the differences between purchase behaviors of male and female consumers can be examined via qualitative studies in the future. It

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is recommended for future studies to use qualitative methods to examine the behavioral differences between males and females in online shopping. Future researchers are also recommended to examine the behavioral differences of consumers in different age groups, especially in qualitative studies and through interviews. Also, it is recommended for future researchers to conduct a similar study in other countries with different demographic variables, including the education and occupation of the participants.

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APPENDIX 1: *QUESTIONNAIRE*

Gender: 1- Male 2-Female

Age: 22 years and lower - 23–37 years - 38–50 years - above 50 years -

Education: 1- Diploma and lower 2- Associate 3- Bachelor 4-Master 5- Ph.D.

Time on Facebook (Daily average): 1- below one hour 2. One to two hours 3. Two to three hours 4. More than 3 hours

Time on Facebook (for purchase goal): 1- below one hour 2. One to two hours 3. Two to three hours 4. More than 3 hours

Consumer purchase behavior (Turban et al., 2008)

1. I am familiar with online purchase on Facebook.
2. I am familiar with searching for the products I need in online stores on Facebook.
3. I constantly use the online purchase of Facebook.
4. Using online purchase on Facebook is a daily routine for me.
5. I have used Facebook online purchase many times
6. Online purchase is a good idea for modern life.
7. Based on my experience, online purchase is safe.
8. Online purchase saves me time.
9. In many cases, I prefer online purchase to traditional purchase.
10. Online purchase provides many options for comparing price and quality.

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RECONCEPTUALIZING OPPORTUNITY CONSTRUCT: AN ANSWER TO A THEORETICAL DILEMMA THROUGH A SYSTEMATIC LITERATURE REVIEW

RECONCEPTUALIZAR EL CONSTRUCTO DE OPORTUNIDAD: UNA RESPUESTA A UN DILEMA TEÓRICO A TRAVÉS DE UNA REVISIÓN SISTEMÁTICA DE LA LITERATURA

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RECEIVED: 19/11/2020

MODIFIED: 04/02/2021

ACCEPTED: 27/03/2021

DOI: https://doi.org/10.17230/Ad-minister.39.3

ABSTRACT

After Shane's seminal work in 2000 which highlighted the importance of entrepreneurial opportunities, the number of studies focusing on entrepreneurial opportunity increased rapidly. Different definitions of this concept were provided in the field, ranging from subjective to objective ones, which gave rise to a lack of consensus among researchers and this, in turn, was an obstacle that slowed down theorizing in entrepreneurship. Taking into account the past trends in management sciences, it seems to be the right moment to re-conceptualize the core construct of opportunity. The major critique of existing definitions is their operationalization. To provide a better operationalization, the present study aimed to offer a more accurate conceptual definition. To this end, the study first examined current debates on opportunity, which revealed the major problem causing the debates. Then, through a systematic literature review, from among more than seven thousand documents in the Scopus database containing opportunity keywords, 74 papers were selected following different phases of filtration. The papers were analyzed in detail to extract different constructs. Then, using the framework of Hansen et al, they were classified along six dimensions. The concepts under each dimension were examined to finally provide a bigger picture of the construct of opportunity and offer a re-conceptualization. The results of this study highlight the gaps for future research and pave the ground for other systematic literature reviews in the field.

KEYWORDS

Opportunity, Conceptualization, Reconceptualization, Operationalization, Entrepreneurship

RESUMEN

Después de que el influyente trabajo de Shane en 2000 destacó la importancia de las oportunidades empresariales, el número de estudios centrados en las oportunidades empresariales aumentó rápidamente. En el campo se aportaron distintas definiciones de este concepto, que van desde las subjetivas hasta las objetivas, lo que generó una falta de consenso entre los investigadores y esto, a su vez, fue un obstáculo que frenó la teorización en el emprendimiento. Teniendo en cuenta las tendencias pasadas en las ciencias de la administración, parece ser el momento adecuado para reconceptualizar el constructo central de la oportunidad. La principal crítica de las definiciones existentes es su operacionalización. Para brindar una mejor operacionalización, el presente estudio tuvo como objetivo

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ofrecer una definición conceptual más precisa. Con este fin, el estudio examinó en primer lugar los debates actuales sobre las oportunidades que revelaron el principal problema que suscitan los debates. Luego, mediante una revisión sistemática de la literatura, de entre más de siete mil documentos en la base de datos Scopus que contienen palabras clave de oportunidad, se seleccionaron 74 artículos siguiendo diferentes fases de filtración. Los artículos se analizaron en detalle para extraer diferentes constructos. Luego, utilizando el marco de Hansen et al, se clasificaron en seis dimensiones. Se examinaron los conceptos de cada dimensión para finalmente proporcionar una imagen más amplia del constructo de oportunidad y ofrecer una reconceptualización. Los resultados de este estudio destacan las brechas para futuras investigaciones y preparan el terreno para otras revisiones sistemáticas de la literatura en este campo.

PALABRAS CLAVE
Oportunidad, conceptualización, reconceptualización, operacionalización, emprendimiento.

INTRODUCTION

In social sciences, there exist many debates on the role of concepts, theories, and models. A concept is an imagination that appears in the words of thinkers or researchers. Technical concepts in different subjects constitute the language, expressions, or discourse of that field. Simple and complex concepts as well as subjective and objective ones give rise to the formation of different views in theories of social sciences. Concepts are the building blocks of theories, and theories define the relationships between concepts (Blaikie, 1933). It is the responsibility of researchers to choose and use the appropriate concepts in their works.

In the field of entrepreneurship, opportunity lies at the heart of the theory of entrepreneurship (Salamzadeh & Roshandel Arbatani, 2020; Wood, 2021) and many authors hotly debate the quality of the concept, and some of them try to reject or substitute it. This inconsistency is an obstacle to the promotion of theorizing entrepreneurship. The problem of construct clarity is the most accepted view in conceptualizing. Lack of operational definition is another important criticism. The present paper first attempts to deal with the relevant debates. It then seeks to provide a re-conceptualization of opportunity through a systematic literature review of the papers published in a valid database.

LITERATURE REVIEW

Hill & Birkinshaw (2010) has argued that in empirical research on the identification of entrepreneurial opportunities, the theoretical gap is the difficulty in defining and measuring an appropriate unit of analysis to study opportunity. Hill & Birkinshaw (2010) have therefore proposed "idea set" as an alternative. They believe the most important question to ask in entrepreneurship is why only certain people and not all can identify entrepreneurial opportunities (Shane & Venkataraman, 2000, p. 221). They assume that advancement in this field refers to how well opportunity is defined and measured, and in their view, only little advancement is made.

Recent review studies on entrepreneurship revolve around the concept of opportunity, and they have also increased in number (Achtenhagen, 2020; Emami & Khajeheian, 2018; Healey et al., 2021; Loan et al., 2021). Short et al. (2010) have systematically reviewed these studies and have classified them in terms of

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opportunity and processes pertaining to opportunity. They contend that there is no entrepreneurship without opportunity; to them, a potential entrepreneur who is creative and hardworking cannot start an entrepreneurial activity if he does not aim for a certain opportunity. This means that although in the past research in entrepreneurship has mainly focused on entrepreneurs and how they go through the process of developing a new business, in recent years, the attention of researchers has shifted toward the role of opportunity (Short et al., 2010; Su & Zarea, 2020) .

Eckhardt and Shane (2003) believe that the trend of research has shifted from focusing on the identification of those who decide to become an entrepreneur and the appraisal of their qualifications to the individual-opportunity bond. This new approach requires that the researchers start to explicate the role of opportunity in the entrepreneurial process (p. 333). It should be noted that opportunity is a key concept in determining the limits and the changing conditions in entrepreneurship (Busenitz et al., 2003).

Although opportunity has been accepted as a key concept in entrepreneurial research over the years (Emami & Klein, 2020; Khajeheian, 2018), there is little consensus among researchers as to its definition and significance (Hansen et al., 2011b). There are two schools of thought on opportunity. One focuses on the identification of opportunity, and the other on the creation of opportunity (Alvarez & Barney, 2014). Another approach to opportunity considers it as the product of a creative process that has gradually moved towards the synthesis of ideas (Emami et al, 2021; Dimov, 2007). Still, other researchers highlight the chance of introducing innovative products, services or processes (Crespo et al., 2020; Ebrahimi et al., 2018; Gaglio, 2004; Moghadamzadeh et al., 2020; Salamzadeh et al., 2017). Finally, to some scholars, it is the role of opportunity in developing a new business that matters (Baron, 2008).

Opportunity and opportunity studies, therefore, fall into two general categories that separately deal with the definition of opportunity and the processes related to opportunity, such as identification, assessment, and use, and all these have made it even more difficult to provide a unified definition of this concept.

Meanwhile, there is a general approach toward opportunity which is not approved by all researchers in the field. Some scholars believe that opportunity should be dismissed and replaced by alternative concepts, and others vote for preserving the concept and providing a more precise and acceptable definition for it.

Wood (2021) considers entrepreneurial opportunity as an umbrella construct that subsumes different activities that give rise to the development of a business. He argues that an umbrella concept, as discussed in studies that have attempted to develop constructshirs (Hirsch & Levin, 1999; McKinley & Mone, 1998), has more advantages compared to the components of the opportunity construct, which are either very detailed or of a lower order. Umbrella concepts include components that represent a complicated whole. Based on this view, Wood disagrees with the approaches that either dismiss the concept of opportunity altogether or break it into its components (Wood, 2017). He also believes that the problem arises from the fact that previous researchers have definitional fragmentation because they have attempted to explicate and clarify the concept; they are also concerned that when the concept of opportunity, which is informally used by entrepreneurs, is defined in technical terms and for research purposes, the validity of the research is negatively affected.

On the other hand, Davidsson (2015a, 2017) is concerned with the components comprising the opportunity construct, but he does not offer convincing arguments why opportunity should not be seen as a general concept in entrepreneurship. However, Wood deems Davidson's attitude as valuable in pushing entrepreneurial research forward but contends that replacing the concept of opportunity as an umbrella concept with a number of smaller constructs causes more trouble in both applied and conceptual studies. To Wood (2017), considering opportunity as a concept is beneficial, and the diversity of definitions helps with the clarification of the conceptualization of the entrepreneurial process.

Many studies on entrepreneurship have regarded the construct of entrepreneurial opportunity as a fundamental issue (Kuhn, 2013; Salamzadeh et al., 2019; Short et al., 2010) Despite all these, there are serious research challenges due to vague definitions of or imprecise theoretical arguments about the concept of opportunity. To some scholars, linguistic innovation accounts for the diversity of definitions (Ramoglou & Zyglidopoulos, 2015). Dimov (2011) for instance, contends that the concept of opportunity is by definition vague, and for (Davidsson, 2015a) its clarification seems impossible. Hence, there are scholars like Davidson who propose the replacement of this construct with other alternatives (e.g. new venture idea, external enablers, or opportunity confidence), while others dismiss the concept altogether (Foss & Klein, 2012; Klein, 2008). These challenges are significant in that they illustrate a tendency in scholars of entrepreneurship to escape focusing on the fundamental problems about the concept of opportunity and instead deal with other issues.

Opportunity as an umbrella construct includes a range of dynamics that give rise to the formation of a new business. The importance here lies in the fact that previous studies have revealed that umbrella constructs usually have predictable rise and fall over the course of time.

Hirsch & Levin (1999) have examined the changes in umbrella constructs and have shown that when researchers face the vague aspects of a construct, they attempt to dissect the construct to its components or provide various definitions in order to characterize and measure a sophisticated construct which evades satisfactory definitions. In many cases, the dissatisfaction with proposed definitions leads to questioning and rejecting the construct and thereby challenges other scholars to provide alternative definitions. This has happened in research studies on opportunity in entrepreneurship. Accordingly, we can say that most definitions proposed so far are of this nature.

According to Hirsch and Levin (1999) when we make such attempts, three states of equilibrium are possible: 1. Construct coherence which resolves the fragmentation challenge; 2. Permanent issues, which amounts to agreement over the fact that the construct is a valid representation of the real world and the diversity of definitions is

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acceptable; 3. Construct collapse means dismissing the use of the construct in favor of the alternative approach of using its components. It is therefore obvious that the attempts by some scholars to replace the construct with its components or to dismiss the concept both fall under the third category of construct collapse.

Wood casts doubt on this trend in entrepreneurship research, arguing that it causes problems in future studies in this field including: 1. Definitional fragmentation which is due to lack of process clarity or the breaking of the construct into its components; 2. The construct represents the technical discourse of entrepreneurship; 3. The researchers who employ opportunity construct will face validity problems and should overcome validity challenges. Taking these into account, Wood believes that we should opt for the equilibrium of permanent issues rather than construct collapse.

There are two major benefits in moving towards permanent issues as a desirable equilibrium; first, an opportunity is an ex-post summative concept, which includes process-driven systematic definitional diversity and at the same time creates coherence among a range of concepts and dynamics. Second, the opportunity construct provides a mechanism for accumulating a reliable body of knowledge that reflects the complexity and multi-dimensionality of entrepreneurship.

Based on the first benefit, scholars highlight the fact that the ex-post nature of opportunity is by no means simple because it takes time and action for the opportunity to be understood (Dimov, 2011; Ramoglou & Tsang, 2017) . Opportunity is by nature a reflexive construct; we cannot decide a priori whether a new business is right or wrong. This is, of course, not limited to the concept of opportunity or the field of entrepreneurship; rather, ex-post concepts which are commonly used in social sciences include complicated phenomena, the results of which unfold over time.

The problem with ex-post constructs is that they are not substantiated in the present time (Dubin, 1978; Martin & Osberg, 2007), but at the same time, they have certain advantages, including their capacity to create coherence among other concepts and dynamics (Law et al., 1998; Suddaby et al., 2015) because they include paradigm insights that express the phenomenon in question(Floyd et al., 2011). For instance, understanding entrepreneurial intention or action is impossible without first understanding the umbrella concept of opportunity.

Therefore, the concept of opportunity cannot and should not be broken into its components because these concepts are constrained by time and space limit coherence. The key benefit of the opportunity construct is that it reflects the processes peak-end (Kahneman, 2019), whereas concepts such as the new venture idea do not show the peak-end and intensify the coherence problem. The significance of the construct coherence should not be underestimated (Wood, 2017)

A historical examination of different disciplines such as organization theory reveals that inattention to the inclusion of ex-post summative constructs has caused fragmentation and the emergence of different schools of thought which have made it even more difficult for the scholars to reach a consensus (McKinley & Mone, 1998; Scherer, 1998); by strengthening opportunity through permanent issues equilibrium – a state in which the researchers consider the ex-post nature of the construct as a strength and not a weakness, because it enhances coherence by means of its representational capacity which covers different relations that emerge over time in the entrepreneurial process – we can evade this mistake in entrepreneurship research (Mcmullen & Dimov, 2013).

The second benefit of permanent issues equilibrium is that opportunity construct is a mechanism to accumulate a body of knowledge that reflects the multi-faceted and complicated nature of entrepreneurship. The value of the opportunity construct is in the fact that it acts as a carrier for the shared results of different researchers that reveal what they study; it also enables researchers to orient themselves against reliable sources. When researchers examine a single phenomenon under different names, quantified accumulation of knowledge happens (McKinley & Mone, 1998; Pfeffer, 1993).

These gradual changes in naming a single phenomenon trap researchers in a linguistic play which prevents scientific consensus (Astley & Zammuto, 1992). Some scholars reach a consensus on naming the construct temporarily, but the reliability of the chosen label is soon questioned by other scholars, and they suggest new labels. This, in turn, slows down scientific advances. The benefit of accepting opportunity in the permanent issues equilibrium contributes to the development of highly valid knowledge.

In spite of the significant growth of entrepreneurship theories, one can claim that without development of measurable theories, further advance in this field seems next to impossible. Here opportunity stands out as the center of these studies, which require better conceptualization and macro-level operationalization (Anokhin et al., 2011).

RESEARCH METHOD

Since many academic papers have concentrated on entrepreneurial opportunities and there also exist heating debates among researchers on this concept, examining the trends has turned into an interesting and significant topic. This study, therefore, aims to examine a large number of such papers. To this end, different keywords related to opportunity were identified as they appeared in the papers published in Web of Science and Scopus databases at the end of 2019. The obtained list was updated for a second time in 2020. The results of the keyword search are presented in Table 1.

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Table 1. Search results of opportunity keywords in Scopus and WOS databases

Keywords	WOS	Scopus
New venture idea	7	23
Opportunity	536,000	748,211
Idea	395,000	685,745
Business idea	173	603
Opportunity conceptualization	2	5
Construct clarity	44	53
Technological opportunity	190	974

To limit the number of papers to be examined, for feasibility purposes, the study draws on big five strategies (Katz, 2003). This method of restricting the journals have been used in a review on opportunity by (Hansen et al., 2011a). Since the list of papers identified in Scopus and WOS databases were very similar to the Scopus list in having a larger number of papers containing the keywords (Vieira & Gomes, 2009), the WOS list was discarded, and the Scopus list was selected instead. The keywords used in the search were relevant to three different views; those who accept the concept of opportunity, those who reject it, and those who propose a new alternative.

As shown in Table 1, some keywords like “new venture idea” and “business idea” have not attracted much attention. The frequency of the two keywords “opportunity conceptualization” and “construct clarity” shows inadequate attention and lack of content regarding a better conceptualization of opportunity construct. Moreover, the main debate between Davidsson (2015b) and Hansen et al. (2011b) revolves around these two concepts. Opportunity and idea are the main keywords used in conceptualization works in this field.

Figure 1. Method of filtering paper search

As illustrated in Figure 1, searching the keyword of "opportunity" in the Scopus database yielded 746692 results. Based on the keyword recommendation of the Scopus engine, the keywords of "entrepreneurial opportunity", "entrepreneurship", and "entrepreneurial opportunities" were also used as a filter which reduced the results to 886 documents. The number of documents was further limited by choosing only the "article" type of document and those published in "English" only. Two more phases of filtration as shown in Figure 1 yielded 74 papers at the end.

According to graph number 3 the results for searching opportunity keyword without any restriction is 746692 documents. By using the keyword recommendation of the Scopus software the keywords of ""entrepreneurial opportunity", "entrepreneurship", and "entrepreneurial opportunities" were filtered, and the results were reduced to 886 documents. Following up the filtration method shown in graph number 3 we summed it up to 74 articles. The most important consideration in the filtration process was drawing on the experience of well-known reviewers in handling a large number of articles on opportunity in the field by restricting their works to important journals only (Davidsson, 2015a, 2017; Hansen et al., 2011b; Short et al., 2010)This study followed the same procedure and, relying on the big five strategies, chose the following five important journals:

- Small Business Economics
- Journal of Business Venturing

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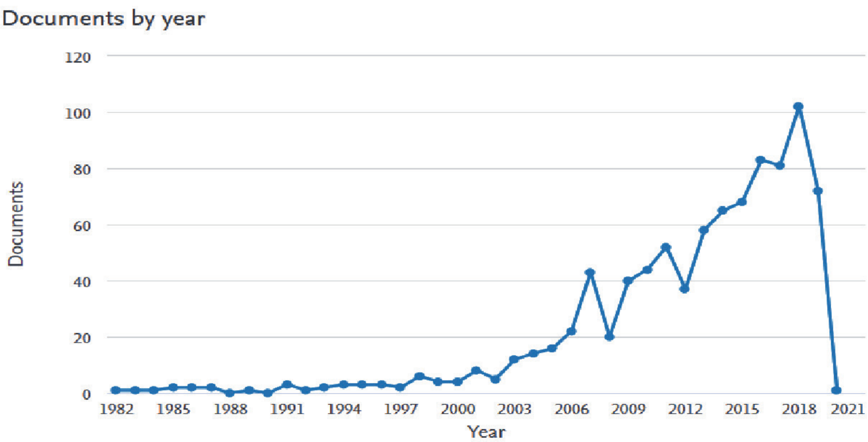
- Entrepreneurship Theory and Practice
- Journal of Small Business Management
- Entrepreneurship and Regional Development

The 74 selected papers were primarily reviewed to be rechecked for their relevance to the subject of research and to be categorized. Then, using a coding system, the following results were obtained regarding the conceptualization of opportunity or the processes related to opportunity.

RESULTS

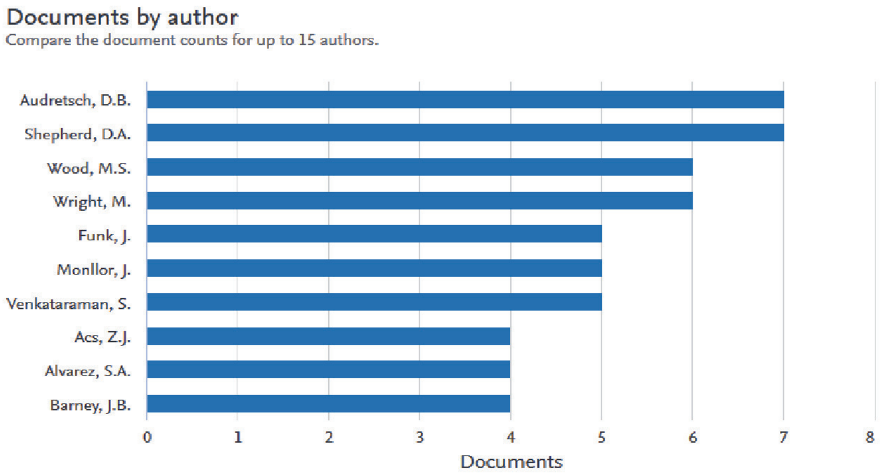
Figure 2 below clearly illustrates how after Shane's seminal paper on the opportunity was published in 2000, researchers have increasingly worked on the subject of opportunity in the field of entrepreneurship. This rise of interest proves that the debate about the definition exists, and different solutions are proposed by researchers.

Figure 2. Number of papers on the opportunity during 1982-2020



Some researchers studying entrepreneurial opportunities have been more active, and the number of their works is higher. Ten of these are shown in Figure 3 below. Knowing these scholars can help new researchers narrow down their studies to certain authors. It must be noted that some researchers like (Davidsson, 2015b) have great works on opportunity conceptualization, but due to the lower number of their papers or the fact that their works do not fall under "papers" category and are usually editors' comment or debate answers, they are not listed in Figure 3;

Figure 3. Authors with the most documents among researchers of the field



To present a comprehensive picture of the research on opportunity construct, these studies are put into five categories based on what (Hansen et al., 2011a) used in their work on defragmenting the definitions of opportunity. A new sixth category of conceptualization is also added which reveals how under-studied this category is.

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Table 2. Categorization of 74 papers in terms of six dimensions

1. Outcomes	2. Behavioral Processes	3. Cognitive Processes	4. Persons/ Organization	5. Environmental Context	6. Conceptualization
1. (Wu et al., 2020)	1. Bhawe et al., 2016; Gustafsson & Khan, 2017)	1. (Dai et al., 2020)	1. (Bishop, 2019)	1. (Goel & Karri, 2020)	1. (Ding, 2019)
2. (Ramoglou & Tsang, 2017)	2. (Bhawe et al., 2016)	2. (Khalid & Sekiguchi, 2018)	2. (Wieland et al., 2019)	2. (Fritsch & Wyrwich, 2018)	2. (Davidsson, 2017)
3. (Davidsson, 2017)	3. (Lerner, 2016)	3. (Vandor & Franke, 2016)	3. (Dai et al., 2020)	3. (Lechner et al., 2016)	3. (Wood, 2017)
4. (Davidsson, 2015a)	4. (Bolívar-Cruz et al., 2014)	4. (Prandelli et al., 2016)	4. (Goel & Karri, 2020)	4. (Bhawe et al., 2016)	4. (Ramoglou & Zyglidopoulos, 2015)
5. (van Burg & Romme, 2014)	5. (Lim et al., 2013)	5. (Audretsch et al., 2015)	5. (Fritsch & Wyrwich, 2018)	5. (Vandor & Franke, 2016)	5. (Davidsson, 2015a)
6. (Busenitz et al., 2014)	6. (Korsgaard, 2011)	6. (Bolívar-Cruz et al., 2014)	6. (Radaelli et al., 2018)	6. (Suddaby et al., 2015)	6. (Dimov, 2011)
7. (Eckhardt & Shane, 2011)	1. (Dimov, 2011)	7. (Tang et al., 2012)	7. (Gustafsson & Khan, 2017)	7. (Audretsch et al., 2015)	7. (Dutta & Crossan, 2005)
8. (Baron & Tang, 2011)	7. (Shepherd & Haynie, 2009)	8. (Baron & Tang, 2011)	8. (Prandelli et al., 2016)	8. (van Burg & Romme, 2014)	8. (Dean & Meyer, 1996)
9. (Edelman & Yli-Renko, 2010)	8. (Politis, 2005)	9. (Edelman & Yli-Renko, 2010)	9. (Davidsson, 2015a)	9. (Bolívar-Cruz et al., 2014)	
10. (Wong et al., 2008)		10. (Vaghely & Julien, 2010)	10. (Shu et al., 2014)	10. (Alvarez & Barney, 2014)	
11. (Companys & McMullen, 2007)		11. (Mitchell & Shepherd, 2010)	11. (Acs et al., 2013)	11. (Woolley, 2014)	
12. (Plummer et al., 2007)		12. (Dimov, 2007)	12. (Arentz et al., 2013)	12. (Acs et al., 2013)	
13. (McMullen et al., 2007)		13. (Mueller, 2007)	13. (Holland & Shepherd, 2013)	13. (Dahlqvist & Wiklund, 2012)	
14. (Sanders, 2007)		14. (Corbett, 2007)	14. (Qian & Acs, 2013)	14. (Harmeling, 2011)	
15. (Dew et al., 2004)		15. (Arenius & Clercq, 2005a)	15. (Lim et al., 2013)	15. (Perrini et al., 2010)	
16. (Dean & Meyer, 1996)		16. (Ardichvili et al., 2003)	16. (Tang et al., 2012)	16. (Edelman & Yli-Renko, 2010)	
			17. (Foo, 2011)	17. (Kwon & Arenius, 2010)	
			18. (de Clercq et al., 2010)	18. (Webb et al., 2010)	
			19. (Mitchell & Shepherd, 2010)	19. (Companys & McMullen, 2007)	
			20. (Shepherd & Haynie, 2009)	20. (Buenstorf, 2007)	
			21. (Wong et al., 2008)	21. (Cohen & Winn, 2007)	
			22. (Dimov, 2007)	22. (Lee & Venkataraman, 2006)	
			23. (Sanders, 2007)	23. (de Carolis & Saparito, 2006)	
			24. (Mueller, 2007)	24. (Arenius & Clercq, 2005b)	
			25. (Corbett, 2007)	25. (Sahlman & Stevenson, 1985)	
			26. (de Carolis & Saparito, 2006)		
			27. (Chiasson & Saunders, 2005)		
			28. (Politis, 2005)		
			29. (Hite, 2005)		
			30. (Dew et al., 2004)		
			31. (Ardichvili et al., 2003)		
			32. (Butler & Hansen, 1991)		

Papers on entrepreneurial opportunities usually focus on opportunity as a concept or definition, or a process related to opportunity like creating, discovering, recognizing, evaluating or exploiting opportunities. Here outcomes, behavioral processes, cognitive processes, environmental context, as well as persons or organizations are used, based on Hansen et al. (2011b) framework, to categorize the concepts used in the definitions (see Table 3). Using the processes related to opportunity will lead to new products, new ideas, and new businesses. These processes will occur in the environmental context of businesses and have impacts on entrepreneurs and opportunities (Dimov, 2007).

Table 3. Number of papers in each dimension

Dimension	Number of papers
Person/organizations	32
Environmental context	25
Cognitive processes	16
Outcomes	16
Behavioral processes	9
Conceptualization	8

As Table 3 shows, most of the works are carried out on the role of person or organization in defining opportunity. Conceptualization has received minimal attention. Additionally, the number of papers on conceptualization clarifies how inadequate attention is directed towards this category. These figures illuminate the future research paths that need to be taken. Theorizing in entrepreneurship needs a better understanding of the existing definitions and conceptual definitions.

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Table 4. Codes of environmental context

Environment / Context

Context:

- University
- Human capital
- Social context
- Institutions
- Social mechanisms
- Poverty
- Poverty context
- Contextual change
- Contextual conditions
- Contextual elements
- Immigrants
- Environmental ambiguity
- Network structure
- Political structure
- Social capital structure
- Governmental policies
- Industry
- Uncertainty
- External enablers
- Infrastructure
- Economic growth
- Infrastructure
- Adversity
- Regional policies
- Structural factors
- Creativity
- Condition
- Environment
- Institutional condition
- Justice

Market related:

- Market structure
- Markets
- Political markets
- Capital market
- Change in the markets
- Market competition
- Market imperfections

Resources:

- Cultural resources
- Source of opportunities
- Resource order
- Resources
- Anticipated social resources

Technology:

- Technology emergence
- Rapid technological evolutions
- Distribution of information
- New industry creation

Culture:

- Inhibition
- Patterns
- Regional culture of entrepreneurship
- Culture
- Historical context
- Gender gap
- Country origin
- Generalized trust
- Social influences
- Disequilibrium

Table 4 shows the concepts used in defining the environmental context in the definition of opportunity or related processes. These are divided into context, market related, resources, technology, and culture. This can help authors to systematically find problems and subjects for future research.

Table 5 below presents the codes used to classify persons and organization.

Table 5. Codes of persons / organizations

Persons / Organizations		
Self:	**Knowledge:**	**Network:**
• Institutional variation	• Scientific knowledge	• Network
• Success	• Innovation Knowledge	• Social network
• Acton	• Stock of knowledge	
• Execution	• Diversity of knowledge	
• Cross-cultural experience	• Historical knowledge	
• Behavior	• Prior knowledge	
• Actor Nexus	• Knowledge spillover	
• Self-employment	• Knowledge filter	
• Identity Conflicts	• Dispersed knowledge	
• Working experience		
• Idea		
• Entrepreneurial persistence		
• Personal contingencies		
• historical contingencies		
• Emotions		
• Risk perception		
• Trust		
• Commitment		
• Image of self		
• Image of vulnerability		
• Image of capability		
• Image of opportunity		
• Traits		
• Preferences		
• Interaction		
• Values		
• alertness		
• Talent		
• Skills		
• Absorptive capacity		
• Cognitive abilities		
• Identification		
• Learning		
• Personalities		
• Self-efficacy		
• Organizational elements		
• Perception of opportunity		
• Social capital		
• Imitation		
• Organizational learning theory		
• Process		
• Experience		

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The concepts under this category are divided into three groups of person, knowledge, and network. Most of these concepts revolve around person.

Table 6 shows codes selected from the definitions of processes relates to opportunities and their outcomes

Table 6. Codes of outcomes, behavioral process, and cognitive processes

Outcomes	Behavioral Processes	Cognitive Processes
• Opportunity	• Emphatic concern	• Perspective taking
• Birth rate of new firms	• Exploit	• Risk
• Outcome	• Search	• Actualization
• Entrepreneurial performance	• Opportunity exploitation	• Opportunity recognition
• Poverty reduction	• Exploit	• Opportunity identification
• Regional development	• Commercialization	• Actualization of opportunity
• Co-creation	• Team	• Opportunity perception
• Brand	• Formal and substantive behavior	• Context decision making
• New venture idea opportunity confidence	• Strategy	• Identify
• Firm performance	• Match	• Discovery
• New industry creation	• Perception	• Entrepreneurial absorptive capacity
• Nascent ventures	• Action	• Perception
• Idea	• Discovery	• Human information processing
• Entrepreneur		• Creativity
• New knowledge		• Conscious selection
• Market newness		
• New venture		
• Objective/subjective opportunity		
• High growth firms		
• Opportunity creation		
• Technological innovation		
• Innovation		
• Creation view		
• Discovery view		
• Firm creation		
• Family business		
• Process innovation		
• Value creation		
• Industry development		
• Organizational development		
• Ownership structure		

This study sought to sort the concepts used in the literature of entrepreneurial opportunity and to make them accessible for the researchers. Different authors have shown the importance of better conceptualization of opportunity for better theorizing of entrepreneurship (Aldrich, 1992; Gartner et al., 2003). Resolving the dilemma of opportunity in this way is an important goal for entrepreneurship researchers. Finding the new trends and new outcomes of the research on the entrepreneurial opportunity will help them find the gaps for future research.

CONCLUSIONS

The six dimensions (see Table 2) used for categorizing the 74 papers selected from among more than seven thousand documents represent a useful framework for researchers to conduct further literature reviews or conceptualization studies on opportunity. Methods of conceptualization have received inadequate attention from researchers, though they play the most significant role in developing efficient theories in the field of entrepreneurship. One possible reason is the difficulty of having the big picture of the findings as there are too many studies in this regard. This paper has attempted to take the preliminary steps in shaping this bigger picture. The big five strategies of restricting journals proved quite helpful and can facilitate the process of future systematic literature reviews. In order to have a better conceptualization of opportunity, it is recommended that the researchers focus on increasing the construct clarity of their concepts. As shown in Table 2, there were only eight articles on this topic.

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SCIENCE AND TECHNOLOGY PARKS: MISSIONS, FUNCTIONS AND ROLES IN HIGH-TECH FIRMS OPERATING IN EMERGING COUNTRIES

PARQUES CIENTÍFICOS Y TECNOLÓGICOS: MISIONES, FUNCIONES Y ROLES EN EMPRESAS DE ALTA TECNOLOGÍA QUE OPERAN EN PAÍSES EMERGENTES

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JEL: I21, I23, M1

RECEIVED: 18/12/2020

MODIFIED: 13/03/2021

ACCEPTED: 16/04/2021

DOI: https://doi.org/10.17230/Ad-minister.39.4

ABSTRACT

Given the vital role of Science and Technology (S&T) Parks in SME development, this article aims to study function, missions and roles of these parks in developing Iranian SMEs. For those entrepreneurs and SMEs focused on commercializing science, these parks provide essential information and advice, as well as proper equipment and services to set the ground for growth and development and an effective and independent presence in today's competitive market. In the first phase, literature reviewed and the functions of S&T Parks in previous research extracted. Then, the extracted missions were distributed among the experts in the form of Delphi questionnaire. Finally, after three rounds of Delphi questionnaire, the missions were finalized and the functions of each mission were operationally described based on the opinions of experts.

KEYWORDS

S&T Parks, Commercialization, Small and Medium-Sized Enterprises, Delphi Survey.

RESUMEN

Debido al papel fundamental de los parques de ciencia y tecnología (C&T) en el desarrollo de las pymes, este artículo tiene como objetivo estudiar la función, misiones y roles de estos parques en el desarrollo de las pymes iraníes. Para estos emprendedores y pymes centradas en la comercialización de la ciencia, estos parques proporcionan información y asesoramiento esenciales, así como el equipo y los servicios adecuados para sentar las bases para el crecimiento y el desarrollo y para una presencia eficiente e independiente en el competitivo mercado actual. En la primera fase, se hizo una revisión de la literatura y se extrajeron las funciones de los parques C&T de investigaciones previas. Luego, se distribuyeron las misiones obtenidas de los expertos a través del cuestionario Delphi. Finalmente, después de tres rondas del cuestionario Delphi, las misiones se finalizaron y las funciones de cada misión se describieron operativamente con base en las opiniones de los expertos.

PALABRAS CLAVE

Parques C&T, Comercialización, Pequeñas y Medianas Empresas, Encuesta Delphi

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1-INTRODUCTION

Science and Technology (S&T) Park is an organization managed by professional experts with a view to increasing wealth in society though promoting the culture of innovation and competition between companies present in the park and knowledge-based companies. To reach this objective, S&T Park keeps science and technology running at universities, R&D institutes, private companies and the market and manages the whole process. It also facilitates the growth of innovation-based companies through incubators and spin-off processes. S&T Parks and incubators are among the infrastructure created to support knowledge-based companies. These centers are currently providing financial, spiritual and legal support, supplying necessary equipment and facilities, offering advice and preparing necessary space for the establishment and growth of knowledge-based companies (Talebi et al., 2010).

An entrepreneurial university can provide solutions for the scientific problems of society, government, and enterprises, while facilitating innovation development by faculty members, providing the market with the results of academic studies, and introducing new innovative technologies (Naderibeni et al., 2020; Salamzadeh et al., 2013, 2016, 2019). Some authors have already studied various aspects of these universities in the Iranian context. For instance, the University of Tehran and Sharif University of Technology are among the first entrepreneurial universities that have been studied by various authors (Guerrero et al., 2014, 2015). The role of S&T Parks is also implicitly or explicitly mentioned by a series of authors. Those research papers have also highlighted the importance of paying attention to such mechanisms in improving the entrepreneurial aspects of universities (Davari et al., 2018; Emami, 2018; Farsi et al., 2011, 2012).

Figure 1: S&T Park in Developing Entrepreneurial Universities

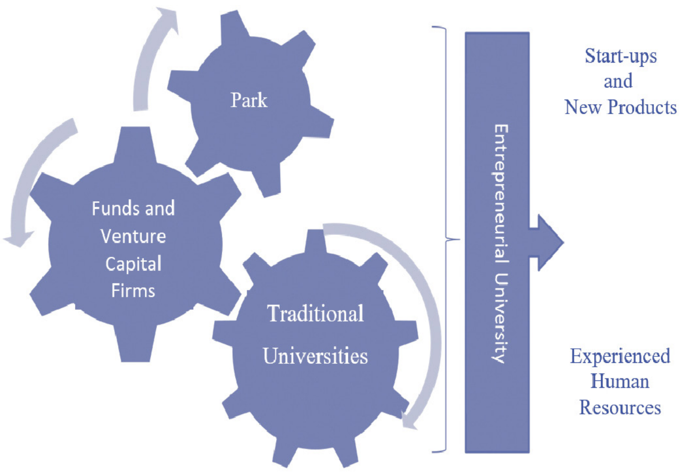

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Figure 1 summarizes the works by (Ding, 2019; Jimenez-Moreno et al., 2013; Wood, 2017) on entrepreneurial universities and their requirements. According to Figure 1, the S&T parks interact with conventional academic bodies and use the sponsorship of funds and venture capitalists to help realize the entrepreneurial universities. S&T Park are intended for SMEs, R&D departments of various industries, and research institutions to effectively interact with one another and with universities, performing technological activities. The ultimate goal of this collaboration is to create and develop technologies, while facilitating technology absorption, promotion, and diffusion so that most activities that lead to technological product development could be performed in these parks. The main activities include idea development, scientific research, engineering design, prototyping, industrial design, standardization, developing technical knowledge, registering intellectual property, market research, sales and consulting services which are all carried out to develop technological products for industries and provide specialized services (Bali & Zarea, 2018; Su & Zarea, 2020; Zarea & Hejazi, 2012). The main question of this article is to study the mission of S&T parks in the development and growth of small and medium-sized businesses in the Iranian environment. In the following section, we will first define S&T parks from various points of view. Afterwards, we will discuss the history of these parks worldwide while studying the organizations associated with the incubators and science parks.

Based on these sections, the mission factors of the parks were extracted and a Delphi questionnaire was presented to experts. In the fourth section, the results of the questionnaire were analyzed and finally the mission factors and functional factors were discussed.

2. LITERATURE REVIEW

2.1. The Definition of S&T Park missions

The core idea behind S&T parks was the collaboration between governmental, academic, and scientific bodies and the private sector to promote new technological SMEs in a proper, active environment. Due to the diversity of these parks and their tremendously different specifications, there is still no conclusive definition for science parks missions (Tsai et al., 2007). Thus, the purpose of establishing a science park varies from one country to another. As a result, each science park is defined based on its unique characteristics. Some of the best definitions that indicate the missions of S&T Parks are listed below:

1. According to the International Association of Science Parks (IASP), a science park is an organisation managed by specialised professionals whose main aim is to increase the wealth of the community by promoting the culture of innovation and increasing the competitiveness of companies and institutions. Relying on science, it stimulates and manages the flow of knowledge and technology amongst universities, R&D institutions, companies and markets; it facilitates the creation and growth of innovation-based companies through incubation and spin-off processes (Cuentas et al., 2013a)

2. According to the European Union, an S&T park is a place where newly-formed companies are concentrated within a limited space. Such a place is intended to develop and increase the chances of companies' progress and survival while providing mutual opportunities in a proper space. Based on the types of their activities, these parks are categorized as below (Ibeme, 2020)
    a. Science Parks: These parks are usually formed by the universities in a convenient place next the campus, creating a mutual collaboration between the university and those industries that reside within the park.
    b. Technology Parks: These parks are usually formed next to the industrial hubs and are intended to expand the research relations between the residing industries and academic/research units.

According to the United Kingdom Science Park Association (UKSPA), a science park is "a supporting tool based on owning and supporting the businesses. Its main aim is to encourage and support the start-ups and incubate the innovation-led, high-growth, technology-based companies by providing the infrastructure and support services, e.g. collaboration with economic development agencies, official and operational relationships with advantageous centers such as universities, higher education institutions and research centers, and executive support with an emphasis on transferring technology and business skills to SMEs" (Zhang, 2005a).

3. According to the Iranian "Statute of S&T parks" (approved in 2002 by the "Council for Expanding Higher Education", a division of the Ministry of Science, Research, and Technology), a S&T park is an organization managed by specialized professionals, whose main aim is to increase the wealth of the society by promoting the culture of innovation and constructive competition among the participating companies and knowledge-based institutions. To this end, the park manages the flow of science and technology between universities, R&D institutions, private companies, and the market, while facilitating the growth of innovation-based companies through incubators and spin-offs. Moreover, the parks provide other services as well as working spaces and high-quality facilities. They set up companies that demand such services and fund them through public or private resources. There are a number of legally-independent entities within the S&T parks. Based on the statute or other legal documents, these entities work in the fields of applied research and developmental research, engineering design, reverse engineering, technology transfer, provision of specialized services, and commercialization of research results. The mentioned entities may include private companies, R&D departments of various industries, and research centers affiliated to the universities or executive agencies (Emami & Khajeheian, 2018; Friedrichsen et al., 2017; Soenarso et al., 2013; Yadolahi Farsi et al., 2011; Zhang, 2005a).
4. The S&T parks usually span over a large area, hosting several units from governmental, academic, or corporation laboratories to SMEs. These parks do not necessarily provide a full range of business support services. Some of them are merely incubators, containing those start-ups that are in the early

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stages of growth (Salamzadeh, 2018; Salamzadeh & Kirby, 2017; Su & Zarea, 2020). However, they sometimes provide post-development/post-growth services for spin-offs.

2.2. Review of 5 best S&T parks and their missions

1. Established in 1970, the Cambridge Science Park in the United Kingdom is the oldest and best-known science park in that country. Located 3 kilometers from Cambridge's center it houses 100 companies and covers 5,610,000 square feet (approximately 351,000 square meters) (www.cambridgesciencepark.co.uk). The United Kingdom Science Parks Association (UKSPA) has defined science park missions as follows:

- holding formal and operational relations with a university or other scientific institutes or main research centers;
- having been designed to encourage development and growth of knowledge-based businesses or other organizations present in the park;
- exercise management functions and tasks through active participation in the transfer of technology and commercial skills to organizations present in the park.

Therefore, an S&T Park necessarily exercises knowledge-based businesses and therefore each science park matching this definition may be studied as an industrial park. Another problem pertains to such definitions as research park, innovation centers and business centers. Sometimes all of them are interpreted as the same (Saublens et al., 2008).

2. Japan: One of Asia's largest science parks has been established in Japan. Tsukuba Science City was launched in 1972. It comprises several universities and research centers. The idea was to create a research environment and bring scientists together for an optimal us of science and technology as well as economic growth and development in this country (www.businesssupport-chiba). The missions assigned to Japan's park are as follows:

- Developer of innovative environment with necessary infrastructure for research activities (land, building, advanced communications and logistic services)
- Facilitator of growth at small and large innovative organizations, providing services and aid to them (like incubators for nascent companies)
- Engaging higher education and other scientific organizations in the process of research and development, implementation and use of fundamental scientific innovations (Soenarso et al., 2013).

3. South Korea: The South Korean government established Daedeok Innopolis, formerly known as Daedeok Science Town, in 1973. It is now recognized in the world with its research achievements, including 30,000 patents inside and outside South Korea. It regroups 232 education and research institutes, including 18 state research institutes and 29 private business research institutes. Furthermore, it has hired 18,000 researchers, including 5,000 PhD holders. (www.metro.daejeon.kr) Ibeme (2020) has announced increasing wealth in society through encouraging and improving the culture of

innovation and boosting competition among companies functioning based on science as its main mission. The main three missions assigned to this science park are as follows: Renewal of industrialization, regional development and development of synergy. To that effect, graduates of local universities are empowered to commercialize their research ideas and prepare the ground for small businesses using sophisticated technologies (Cuentas et al., 2013a).

4. Russia: Moscow State University Science Park (MSU Science Park) was established in 1992 with a view to creating an environment for the manifestation of creative ideas at the university. MSU Science Park provide the following services: Preparing rented space, creating intercommunications between member companies, financing, commercial-administrative consultation, interaction between university and knowledge-based companies, introducing companies to one another, training, creating communications between investors and idea developers to design a master plan for S&T Park. The missions of MSU Science Park are as follows:

- Cooperation with companies in the domain of IT and communications with a view to realizing major projects which companies may not operate alone;
- Creating long-distance communication infrastructure necessary for facilitating corporate operations;
- Attracting major foreign companies active in technological science to a zone where the park is located;
- Using the technical capacities of universities in the region;
- Hiring a large number of young experts for stimulation and staying in the region;
- Encouraging innovation and creating a favorable economic environment;
- Encouraging financing of new companies;
- Creating an economy based on knowledge and innovation (Tsai et al., 2007; Zhang, 2005b).

5. Stanford Research Park (SRP): It is the world's first technology park established in 1951 as a joint initiative between Stanford University and the City of Palo Alto. Stanford is the first industrial zone designed to attract companies and research and development activities near a university. SRP is also the first innovative technology-based park in the vicinity of a university. The idea of technology park establishment was later pursued in the US and largely in Europe. In 1955, seven companies joined this park. In 1960, they numbered 32 and today more than 140 companies are present on 655 ha of land at this park. Renting out land at this park has been a good source of income for the university, helping it become known as one of the largest research universities across the globe. This park has also established effective communications between the university and the industry to facilitate industrial spin-off. SRP is the origin of Silicon Valley. The missions assigned to this park are as follows:

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- Helping increase wealth in society through knowledge-based economic development;
- Commercialization of research results;
- Increasing competitiveness and growth of knowledge-based companies;
- Helping absorb internal and international technical knowhow and capitals;
- Enhancing presence and partnership of domestic technological companies at international level;
- Supporting establishment and development of technology-based SMEs;
- Supporting innovative research and engineering institutes and companies for development of technology and entrepreneurship (Siegel et al., 2003).

2.3. Literature of S&T park missions

Several studies have been conducted to investigate various missions of S&T parks, each mentioning specific functions based on the corresponding research questions. Ahmadinejad (2020) stated that the main S&T parks' missions include supporting the development of knowledge-based businesses, stabilizing them accordingly, and facilitating investments in technology-based start-ups.

Other researchers such as Lee and Venkataraman (2006) mentioned other functions, e.g. creating new recruitment opportunities due to the commercial development of new technologies, promoting entrepreneurial capabilities, creating wealth, and improving welfare. The S&T park missions pursue the following matters:

- Acquisition and physical clustering of reputable technology-based companies
- Improving and increasing the local resources of science and technology to enhance the economic base of the corresponding area
- Knowledge transfer on a larger scale, including the transfer of new ideas and technologies and diffusing them on a larger scale
- Creating effective interaction between universities, research institutions, and the private sector; these interactions are mostly based on a joint research environment
- Facilitating the development of start-ups and the growth of local technology-based companies, especially through internal incubation facilities
- Encouraging collaboration between research institutions, businesses, and government agencies based on firmly specified commitments, to achieve personal and common goals through close collaboration (that might occur in the form of collaborative research, associations, and alliances (Cuentas et al., 2013b; Noruzi et al., 2015a; Saublens et al., 2008; Zhang, 2005a).

Moreover, Noruzi et al. (2015b) mentioned the capability of networking between various innovation stakeholders as the primary function of these parks. They confirmed that the S&T parks play a vital role in creating and improving the university-industry relationships through these missions:

1. Establishing joint research laboratories,
2. Enabling the users within the industry to use park facilities,
3. Collaborating with technology transfer centers of universities,
4. Providing specialized education for industry users, e.g. educations based on modern technologies, and 5) Networking between human resources to address industry requirements (e.g. through internship programs and job provision for fresh graduates). Some studies have concluded that governments pursue at least three major objectives in developing science parks, requiring different obligations in the park development policy (Su & Zarea, 2020):

5. Commercialization of research results/innovation: The main performance of the science park is to promote competitiveness among associated innovation groups for encouraging them and improving their results. A science park creates a network between key actors and facilitates the process of innovative commercialization.
6. Reindustrialization: Science parks spread the emergence of new industries against the backdrop of decline of older industries in local economy. New industries create jobs to make up for jobs lost due to the end or downsizing of other industries.
7. Local/regional development: Science parks target the difference in economic development and imbalance between different zones and serve as catalyst for rebalancing regional economy. Helping establish new companies is a major policy exercised by science parks in realizing this objective.

Hall et al. (2006) conducted research titled "Public Policy and Entrepreneurship". They noted that entrepreneurship is a primary catalyst for economic growth and regional development. Recognizing its importance, state and local policymakers are now devoting considerable resources to fostering entrepreneurship. After a brief discussion of the data and theories of entrepreneurship, they present a framework for thinking about government's role in the entrepreneurial process. They then examine the research on macro-level determinants of entrepreneurial activity and find that policies broadly consistent with economic freedom, such as secure property rights, low taxes, and low regulations lead to a robust entrepreneurial environment.

Wasim (2014) conducted research titled "Factors for Science Park Planning". The importance of a science park as an instrument of economic development has been realized by developed economies for past three decades. However, in terms of planning, science parks are not subjects of global consensus. To meet the need for a better understanding of planning, this research studied science parks in developed and developing economies to identify factors that are globally used in this context. This research has identified effective factors in science park planning as follows: government (management, stakeholders, target group, capital, technological focus), growth (networks, business support, infrastructure, incentives, culture), external factors (R&D policies, financial policies, stock markets, unofficial economy, foreign investment).

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Kostka (2014) carried out research titled "Barriers to the Implementation of Environmental Policies at the Local Level in China". His findings may be divided into two groups: 1. Institutional barriers (environmental and planning system, political and economic incentives, public and private participation and interests, and financial, technical, and political resources); 2. Behavioural and socio-cultural barriers (personal preferences, values, norms, social pressure).

Soenarso et al. (2013) conducted research titled "Development of Science and Technology Park (S&T Park) in Indonesia to Support Innovation-Based Regional Economy". S&T Park is perceived to be a vehicle in promoting innovation-based economic growth within the framework of regional and national innovation systems. S&T Park is a tool to encourage regional innovation and competitiveness in increasing contribution of science and technology in economic development. S&T Park can also be a leading sector in creating conducive environment for local community's technopreneurship. In relation to the vision outlined in the 2025 Indonesian Master Plan of Acceleration and Expansion of Indonesia's Economic (MP3EI), S&T Park is stated to be an important element in creating innovation within the framework of Special Economic Zone among six Economic Corridors. Hence, the government of Indonesia continues to encourage the development of S&T Parks in Indonesia by involving local governments, universities, business players and stakeholders surround the area. Ultimately, S&T Park is a platform in developing National Innovation System (NIS) and Regional Innovation System (RIS).

After a review of research stream, the main S&T Park missions sum up as 9 missions below:

- Supporting development of knowledge-based businesses
- Creating and commercializing technologies and innovative products
- Promoting knowledge sharing and networking among various stakeholders of the innovation process
- Helping to create wealth and improve welfare in the corresponding region
- Stabilizing knowledge-based businesses
- Culture building and promoting entrepreneurial activities
- Facilitating investments in technology-based start-ups
- Improving entrepreneurial capabilities
- Providing new recruitment opportunities due to the commercial development of new technologies

Also, 11 functions have been outlined in the relate literature including establishing a company, developing a product, training human resources, defining key success factors for the company, culture building, employee motivation and talent seeking, enabling private or academic entrepreneur communities, creating academic teams and Funds and venture capital firms.

3. RESEARCH METHODOLOGY

This research is applied in terms of purpose, exploratory in terms of data and cross-sectional survey in terms of nature. In the present study, the researcher in the first stage studied the research literature and the world's top science and technology parks with a view to identifying the mission and functional factors of the parks. The purpose of this stage is to identify all the missions and corresponding functions. In the next step, the final factors were extracted through three-stage Delphi analysis.

3.1. Population and Sample Size

The experts' population under study comprises three groups: policymakers and designers of science and technology parks; senior managers of small and medium-sized businesses based in the parks; and faculty members familiar with research as experts in research work. The questionnaire was given to 19 experts at three steps.

Table 1: Types of Experts Participating in Delphi Survey

Group	Type of Expertise	Number of Experts
1	Policymakers	3
2	SMEs CEO	6
3	Faculty members	10

3.2. Validity and Reliability

In examining the validity, content validity ratio (CVR) and content validity index (CVI) are used. To determine CVR, the experts were asked to evaluate each item based on the three-part spectrum of "It is necessary", "It is useful but not necessary" and "It is not necessary". The final response is calculated with the following equation:

$$\mathbf{CVR} = \frac{\mathbf{n_e} - \mathbf{N}/_{\mathbf{2}}}{\mathbf{N}/_{\mathbf{2}}}$$

where N denotes the total number of experts and the number of experts who have endorsed the question. If the calculated value is higher than the value given in the table, the item's validity is accepted. The panel counts 19 members. Therefore, the minimum value for CVR is 0.49. In all questions, CVR has been estimated at over 0.49, which indicates the validity of the research. The minimum CVR values are given in the table below (Hoepfl, 1997.; Woudenberg, 1991):

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Table2: Minimum CVR Value for Acceptable Validity

Experts Panel	5	6	7	8	9	10	15
Minimum CVR	0.99	0.99	0.99	0.75	0.78	0.62	0.49

Once CVR has been calculated, the experts are asked to fill in the questionnaire for measuring CVI. The experts panel were asked to score the clarity, simplicity and relevancy of each question using a four-point Likert scale:

1. Relevancy (irrelevant (1), needs essential revision (2), relevant but needs revision (3), entirely relevant (4))
2. Simplicity (not simple (1), needs essential revision (2), simple but needs revision (3), entirely simple (4))
3. Clarity (not clear (1), needs essential revision (2), clear but needs revision (3), entirely relevant (4))

CVI is calculated by dividing the total of "relevant but needs revision" and "entirely relevant" scores for each item by the total number of experts. The formula is given below.

$$\mathbf{CVI} = \frac{\mathbf{n}}{\mathbf{N}}$$

where n shows the number of evaluators having scored the item 3 and 4 and No represents the total number of evaluators. In the CVI score is higher than 0.79 the item is deemed suitable. The items with CVI score between 0.79 and 0.70 need revision and the items with CVI below 0.70 are unacceptable. As in our study, the score for all items was higher than 0.79, CVI is confirmed(Dawson & Brucker, 2001).

4. DATA ANALYSIS

4.1. experts information

In the first part of the questionnaire, a number of questions were asked with the aim of collecting information about experts. The questions were about the experts' gender, fields of study, job level, and the corresponding S&T park location. In this section, some points shall be mentioned about the questions: First, by job level means their role as specialist or manager. Also, the field of study were divided into three general categories, namely science (e.g. chemistry, polymer, etc.), technical and engineering (e.g. robotics, computer programming, etc.), and management (e.g. business administration, economics, technology management, etc.). Finally, the park location was divided into three categories, namely based in Tehran, on the suburbs of Tehran, and in other cities.

A total of 19 experts responded to the mentioned questions. The following charts summarize the information of the respondents.

According to Chart 1, the majority of the respondents (71%) were men. Moreover, according to Chart 2, most respondents (56%) were in managerial positions. Since the questionnaire aimed to investigate the functional structure of the park, we attempted to survey those who were somehow familiar with these concepts. However, since a large number of the companies located in the parks were run by their mainstream thinkers, according to Chart 3, only 38% of respondents had studied in economics and administrative fields. Also, 66% of the experts worked in Science & Technology parks of Tehran County.

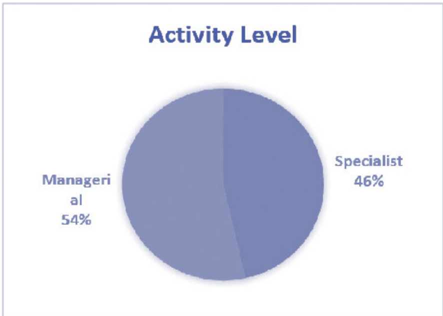

Chart 2: The Activity Level of Respondents

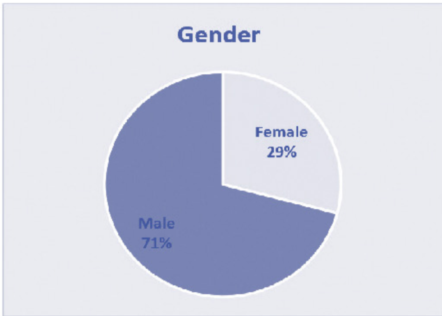

Chart 1: The Ratio of Respondents' Genders

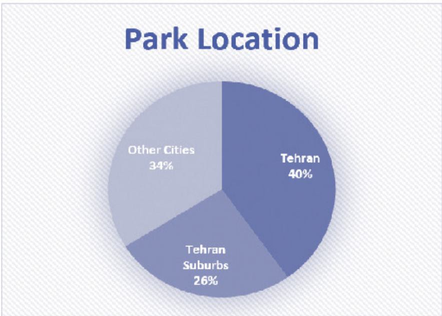

Chart 4: The Location of the Parks

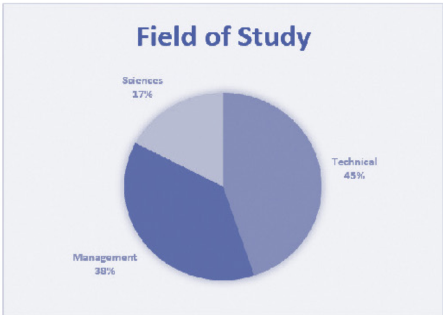

Chart 3: Respondents' Fields of Study

4.2. Implementation of Delphi Method

As the first step of the Delphi Method, it was necessary to develop a questionnaire to elicit experts' opinions. A questionnaire was developed based on the 9 missions and 11 functions extracted through literature review. A sample question is shown below: To what extent do you agree that "supporting development of knowledge-based businesses" is a main function of the S&T park in an entrepreneurial university?

Very high, High, Moderate, Low, Very low

In the first round of Delphi survey, the questions were asked from all 19 participants.

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Those functions with more than 50% of responses indicating "Very high", "High", or "Moderate" were selected as the main questions for the second round. Regarding the Delphi methodology, those functions with more than 70% of responses indicating "Very high" or "High", were introduced as the ultimate functions. Thus, the Delphi method was repeated until all proper functions were selected. As shown below in the table 3, functions number 4, 7, and 9 were eliminated due to the low rate of consensus.

Table 3: The Results of the First Round of Delphi Survey

No.		Missions /Functions	Number of Expert Responses				
			Very high	High	Moderate	Low	Very low
1	Missions	Supporting the development of knowledge-based businesses	14	5	-	-	-
2	Missions	Creating and commercializing technologies and innovative products	2	6	4	7	-
3	Missions	Promoting knowledge sharing and networking among various stakeholders of the innovation process	2	7	10	-	-
4	Missions	Helping to create wealth and improve welfare in the corresponding region	2	-	8	9	-
5	Missions	Stabilizing knowledge-based businesses	13	4	2	-	-
6	Missions	Culture building and promoting entrepreneurial activities	-	9	5	5	-
7	Missions	Facilitating investments in technology-based start-ups	-	3	6	4	6
8	Missions	Improving entrepreneurial capabilities	8	6	2	3	-
9	Missions	Providing new recruitment opportunities due to the commercial development of new technologies	1	2	3	5	4
10	Functions	Establishing a company.	1	8	10	-	-
11	Functions	Developing a product,	0	7	12	-	-
12	Functions	Training human resources,	3	6	10	-	-
13	Functions	Defining key success factors for the company	5	7	7	-	-
14	Functions	Culture building,	0	7	12	-	-
15	Functions	Employee motivation	0	9	10	-	-
16	Functions	Talent seeking,	6	6	7	-	-
17	Functions	Enabling academic entrepreneur communities	5	4	10	-	-
18	Functions	Enabling private entrepreneur communities	4	5	9	1	-
19	Functions	Creating academic teams	3	5	9	2	-
20	Functions	Funds and venture capital firms	7	5	7	-	-

In the second round, the following factors were asked from the experts. Table 4 summarizes the experts' responses to the questions in the second round. In this round, the options were limited to "Very high", "High", or "Moderate". Moreover, it was decided that each mission/function with more than 70% of the responses indicating "Very high" or "High" shall be selected as a main missions/functions of S&T parks.

Table4: The Results of the Second Round of Delphi Survey

No.	Missions /Functions		Number of Responses		
			Very high	High	Moderate
1	Missions	Supporting the development of knowledge-based businesses	17	2	-
2		Creating and commercializing technologies and innovative products	2	8	9
3		Promoting knowledge sharing and networking among various stakeholders of innovation process	2	7	10
4		Stabilizing knowledge-based businesses	13	6	-
5		Culture building and promoting entrepreneurial activities	4	10	5
6		Improving entrepreneurial capabilities	6	8	2
7	Functions	Research and development	7	7	5
8		Human resource training	8	6	5
9		Accelerating (private or academic)	8	8	3
10		Creating academic teams and developing prototypes	10	5	4
11		Pre-acceleration	9	9	1
12		Culture building, motivation, and talent seeking	8	8	3
13		Events (activation, entrepreneurship, private, and academic)	8	6	5
14		Establishing successful companies	8	8	3
15		Incubators	10	5	4
16		Successful knowledge-based companies	9	9	1
17		Funds and venture capital firms	8	8	3

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In the third round, the following factors were asked from the experts. Table 5 summarizes the experts' responses to the questions in the third round. In final round, the factors were limited to "Very high", "High", or "Moderate". Moreover, it was decided that each missions/functions with more than 70% of the responses indicating "Very high" or "High" shall be selected as a final missions/functions of S&T parks.

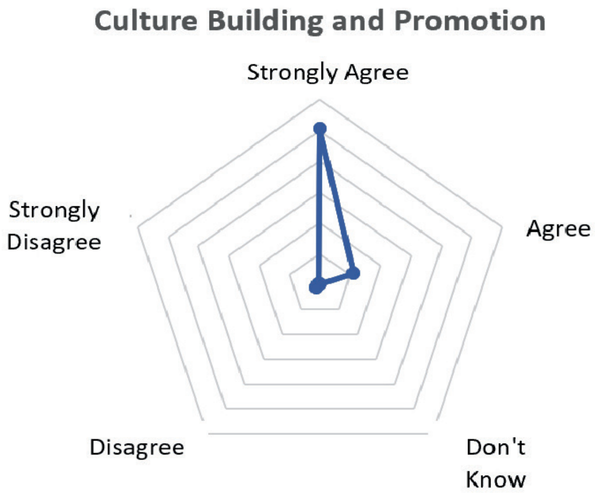
Table 5: The Results of the Final Round of Delphi Survey

No.	Missions /Functions		Number of Responses		
			Very high	High	Moderate
1	Missions	Supporting the development of knowledge-based businesses	18	1	-
2	Missions	Stabilizing knowledge-based businesses	12	7	-
3	Missions	Culture building and promoting entrepreneurial activities	10	9	-
4	Missions	Improving entrepreneurial capabilities	8	11	-
5	Functions	Research and development	7	7	5
6	Functions	Human resource training	9	9	1
7	Functions	Accelerating (private or academic)	10	8	1
8	Functions	Creating academic teams and developing prototypes	10	9	-
9	Functions	Pre-acceleration	10	9	-
10	Functions	Culture building, motivation, and talent seeking	9	10	-
11	Functions	Events (activation, entrepreneurship, private, and academic)	10	9	-
12	Functions	Establishing successful companies	9	9	1
13	Functions	Incubators	10	8	1
14	Functions	Successful knowledge-based companies	10	9	-
15	Functions	Funds and venture capital firms	10	9	-

To improve the validity, another questionnaire was distributed among those working in S&T parks. Besides the opinions of respondents toward the 4 final missions, the questionnaire asked them about the corresponding approaches for realizing each functions.

The second part of the questionnaire included questions about the extent to which respondents agreed on the main missions of the parks. According to Chart 5, most respondents completely agreed upon "Culture building and promotion" as a main function of S&T parks.

Chart 5: The Distribution of Responses about Culture Building and Promoting entrepreneurial activities



Moreover, according to Chart 6, the major part of respondents completely agreed upon "Improving entrepreneurial capabilities" as a main function of S&T parks.

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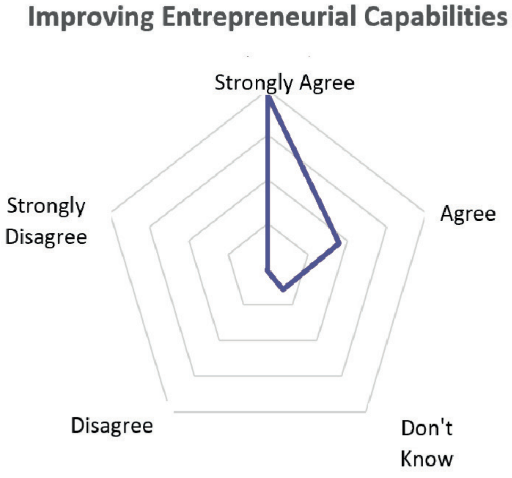
Chart 6: The Distribution of Responses about Improving Entrepreneurial Capabilities



Similarly, according to Chart 7 and Chart 8, most respondents completely agreed upon "Stabilizing knowledge-based businesses" and "Supporting the development of knowledge-based businesses" as two main functions of S&T parks.

Chart 7: Distribution of Responses about Stabilizing Knowledge-Based Businesses

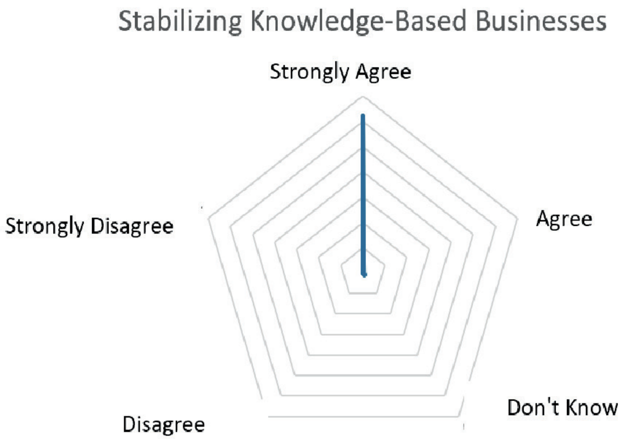
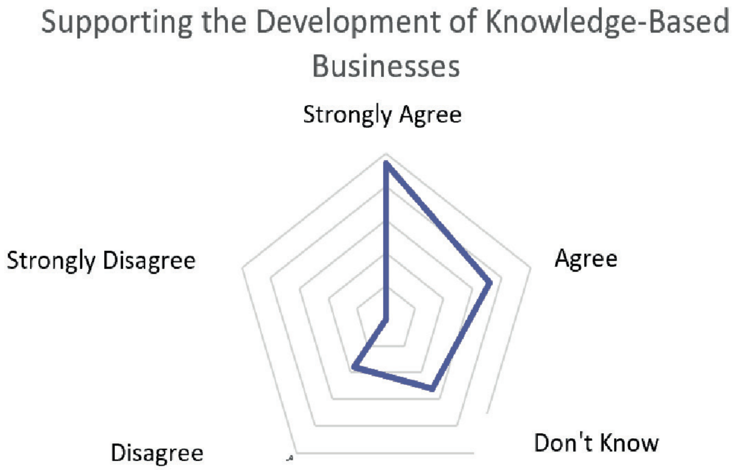


Chart 8: Distribution of Responses about Supporting the Development of Knowledge-Based Businesses



The third and final part of the questionnaire included questions about the solutions for realizing each function. In these questions, the respondents were allowed to choose more than one option. Thus, as an example, “Venture capital financing” was equally pointed out as a viable solution in all four functions. Regarding the above-mentioned issues, for each solution, the function(s) with the highest level of consensus were the best places to use the solution.

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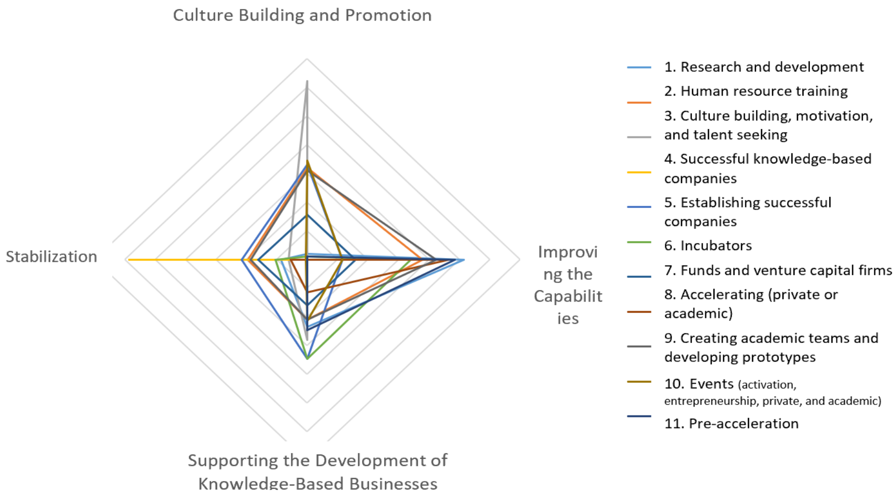
Chart 9: The Solutions Corresponding to Each Function



Based on the results derived from the questionnaire, the conceptual business model for SBU S&T park was developed.

5. DISCUSSION AND CONCLUSION

S&T parks are taking on an increasingly crucial role in the development of countries. Accordingly, integrating the factor of S&T parks into the economy nowadays is of enormous significance. This research attempted to draw on previous studies on S&T parks and their various functions in order to obtain a general view of the functions expected from an S&T park. In previous works, no attention was paid to the role of university S&T parks in developing an entrepreneurial university. Therefore, this study, took into account all dimensions of an entrepreneurial university and the role of S&T parks in forming such universities. This led to a list of expected functions. Afterwards, using the opinions of those experts working either in the park or in the entrepreneurial university, four major functions of the S&T parks were extracted as shown in Figure 10. The figure also shows that R&D centers and incubators within the park, sponsored by funds and venture capital firms, perform activities such as human resource training, creating academic teams, establishing companies and products, etc. As shown in Chart 9, the solution to each function was determined. The solutions and their corresponding functions are listed in Table 6.

Table 6: The functions and Their Corresponding missions

Corresponding Missions	Functions
Improving entrepreneurial capabilities	Research and development
	Human resource training
	Accelerating (private or academic)
	Creating academic teams and developing prototypes
	Pre-acceleration
	Funds and venture capital firms
Culture building and promoting entrepreneurial activities	Culture building, motivation, and talent seeking
	Events (activation, entrepreneurship, private, and academic)
	Funds and venture capital firms
Stabilizing knowledge-based businesses	Successful knowledge-based companies
	Funds and venture capital firms
Supporting the development of knowledge-based businesses	Establishing successful companies
	Incubators
	Funds and venture capital firms

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POLITICAL ECONOMY OF MEDIA: AN INCOME-EXPENSE ANALYSIS OF STATE AIDS TO IRANIAN NEWSPAPERS

ECONOMÍA POLÍTICA DE LOS MEDIOS DE COMUNICACIÓN: ANÁLISIS DE INGRESOS Y GASTOS DE LAS AYUDAS ESTATALES A LOS PERIÓDICOS IRANÍES

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JEL: I21, I23, M1

RECEIVED: 15/11/2020

MODIFIED: 05/03/2021

ACCEPTED: 16/04/2021

DOI: https://doi.org/10.17230/Ad-minister.39.5

ABSTRACT

Iranian newspapers have traditionally relied on state aids and public budget to survive. The dependency has still lingered amid a change of policy that has affected the newspapers' financial status. This article invokes the available data on governmental support to examine the political economy of newspapers in Iran during the two decades of 1990s and 2000s. The data were collected from official releases by the Iranian Ministry of Culture and Islamic Guidance as well as several non-confidential internal bulletins of the newspaper organizations. Having applied an income-expense analysis, the paper explains the government's role in newspaper economics and discusses the policy of repurposing the existing subsidies.

KEYWORDS

Media economics, State aid, Media policy, Iranian newspaper, Print media, Political economy, Communication policy, Business model.

RESUMEN

Los periódicos iraníes han dependido tradicionalmente de las ayudas estatales y del presupuesto público para sobrevivir. La dependencia aún persiste en medio de un cambio de política que ha afectado la situación financiera de los periódicos. Este artículo invoca los datos disponibles sobre el apoyo gubernamental para examinar la economía política de los periódicos en Irán durante las dos décadas de 1990 y 2000. Los datos se obtuvieron de comunicados oficiales del Ministerio de Cultura y Orientación Islámica de Irán, así como de varios boletines internos no confidenciales de las organizaciones de periódicos. Habiendo aplicado un análisis de ingresos y gastos, el documento explica el papel del gobierno en la economía de los periódicos y discute la política de reutilización de los subsidios existentes.

PALABRAS CLAVE

Economía de los medios de comunicación; Ayuda estatal; Política de medios; Periódico iraní; Medios de comunicación impresos; Economía política; Política de comunicación; Modelo de negocio.

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INTRODUCTION

The print newspaper has been one of the oldest sectors of the contemporary media landscape (Boczkowski, 2004; Kumar et al., 2015; Vasundara & Ravi, 2016). It was also the most profitable of all media industries until current century and one of the most profitable of all manufacturing industries (Picard, 2003, p. 109), despite the fact that today the industry faces a dramatic fall in profitability and publishers of print news media witness a decline in their advertising income due to the economic crisis (Björkroth & Grönlund, 2018) as well as emergence and popularity of digital media and accordingly a structural shift of a significant share of advertisers to the internet (Björkroth & Grönlund, 2018; Khajeheian, 2016; Leurdijk et al., 2012; Oliver, 2018; Picard, 2008). Many new sources of news and commentary are available (Khajeheian et al., 2018) and the Internet has enabled the broader dissemination of news and analysis for customers, as well as a source of receiving consumption data and analysis of consumers' behaviors for the media owners (Sharifi et al., 2019; Nemati & Khajeheian, 2018). Still, recent developments have prompted a number of observers to fear that, if newspapers are unable to put themselves on stronger financial footing, and continue to cut back their coverage or shutter their doors, other media outlets will not fill the journalism gap (Varney, 2011). Outstanding newspapers are a symbol of the media power for the host society and the native language (Prat, 2018; Walgrave et al., 2008), thus they are very important part of the media industry and usually governments pay an especial attention to their needs, requests and activities to help them survive and influence the domestic society and abroad (Akhtar & Pratt, 2017; Murschetz, 2013).

Newspaper sector has received remarkable academic attention with many research papers focusing on different aspects of this sector, especially the newspaper economics (Edge, 2019; Murschetz, 2013; Picard, 2008; Sridhar & Sriram, 2015). Iran as a country with a complicated multicultural society and considerable background in the cultural heritage, is already reeling from the inefficiency in the economics of media, newspapers in particular. It is considered as an interesting context to do media research and find out the differences among the various media spheres, including culture, economic structure, different background, the approach to media and press, etc. The study of newspaper sector in Iran can contribute to our understanding of government role in propping up the print media in the country.

This paper intends to shed light on the government aids to newspapers in Iran and open up an opportunity to compare the newspaper economics in other parts of the world which are not limited to the West. In the first section of this article, the authors take a quick look at newspaper history in Iran from an economic perspective, to provide a brief review of the press history in the country. In the follow-up, the modern newspaper economics is explained in detail to explore the core of subject. The main contribution of this paper lies in the income-expenditure approach adopted by the authors to elaborate on the government support for newspapers. Given the current economic situation in the country, it's not difficult to predict a revolutionary change in government's supports and subsidiaries for the newspapers. Hence the

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rest of paper is allocated to exploring the likely changes in the country's newspaper industry and emerging business models in the future.

The subject suffers from the lack of research inside the country, too. Authors found eighteen published articles on newspaper industry inside the Iran. Although a great body of research has already been done, few studied the case economically. As Karimi Abarghoui and Yousef Kanani (cited in (Musai & Mehrara, 2011)) argue, the Center for Media Studies and Research -which supports most of the studies about print media in Iran- has mostly concentrated on social and cultural issues and paid the least attention to the economic aspects. Therefore, the paper aims to contribute to the academic body of knowledge both inside and outside Iran.

While in the absence of accurate official data, it has never been an easy task to examine and analyze the newspaper subsidization in Iran; a favorable opportunity for such an analysis took place in July 2014, when the Iranian Ministry of Culture and Islamic Guidance released a package of information on the subsidy grants offered to the print media as of 2005. The release raised eyebrows as such data were traditionally considered as confidential. This article employs these released data to do an income-expense analysis of Iranian newspapers to understand the economics of the newspapers in the country, through a media political economy lens (Evens et al., 2013; Girija, 2019, 2020; Hardy, 2014; Mohsenzadeh & Mostafavi Rad, 2019). To that effect, the authors would compare the incomes of a given newspaper with its expenses and weigh them out to explore which factors have the largest influence on the newspaper's economics. The findings would be applied to understand a recent repurposing of the state aid.

AN OVERVIEW OF ECONOMICS OF NEWSPAPER INDUSTRY IN IRAN

The first modern newspaper in Iran was launched in 1837 by Mirza Saleh Shirazi Kazerooni under the title of "Kaghaz-e-Akhbar" or the Persian equivalent of "Newspaper." It was launched upon the order of the then Prince, Abbas Mirza and included two pages, containing materials about the royal court as well as the monarchical foreign affairs. The newspaper only ran for three years before the industry got interrupted for as many years until the era of the next Monarch in line, Nasser-Din-Shah (National Library Archive) who ordered the establishment of the next generation of newspapers in Iran. Amir Kabir, the remarkable chancellor of the era, grabbed the opportunity by starting up three newspapers. In 1871, he published the official newspaper of the government under the title of 'Iran' with its editor taking the responsibility for relevant publishing issues. The daily is viewed as the first step toward the establishment of the then Ministry of Publications (or Vezarat-e-Enteba'at) that was assigned to supervise and control the publications across the country (Karnama 2012, p. 161). Up until then, newspapers were exclusively administrated and funded by the royal court with no private press available. Naturally, the newspapers were completely dependent on the government's finance.

Motivated by the emerging global issues amid growing public interest, the Iranian journalists published Persian newspapers abroad on subjects such as law, freedom and justice. These newspapers played a pioneering role in the Iranian Constitutional Revolution that served as a turning point in the contemporary Iranian history. They also helped usher in a considerable change in the Iranian newspaper economics amid the emergence of first privately-owned newspapers to be published abroad which were financed by revolutionary traders. Akhtar (published in Istanbul), Ghanoon (published in London), Hablolmatin (published in Calcutta), Orwatal Wosgha (published in Paris) and Hekmat, Thuraya and Parvaresh (all published in Cairo) are among the most famous ones. These overseas-based newspapers which were not contained by the official red lines the domestic dailies faced, ultimately prompted the government to establish the first press censorship bureau in the country (Karnama, 2012, p. 162)

The next development was the emergence of provincial newspapers that were published under the supervision of governors. As of 1896 to 1904, numerous dailies, weeklies or monthlies were published nationwide many of which privately financed. They were more focused on the market, schools and routine affairs of their local community (Karnama, 2012, p. 162) An interesting point here is the establishment of the first newspaper on women affairs with all-female staff. Titled 'Danesh,' it was the first of its kind in the region. Numerous satirical newspapers were also published at the time. These papers altogether largely influenced the public opinion in the pursuit of the Constitutional Revolution.

The Constitutional Revolution brought newspaper practitioners more freedom so that in addition to the overseas-based newspapers, numerous dailies, weeklies and monthlies emerged at home. These were either publicly-owned or privately-owned (National Library Archive). During the revolutionary era in which the country experienced a lot of political turbulences, the privately owned newspapers played a substantial role in informing the people about the international affairs, thus motivating and boosting the people's pursuit of Constitutionally-secured freedom. The quest ultimately won by ushering out the monarchical era in Iran.

At the beginning of the 20th century, only twelve licensed publications were available in Iran. One of them was a daily with a circulation of up to 1,000 copies. The number of publications at the end of the century however rose to some 1,394 of which 58 were dailies with a circulation of well over 2 million (Qasemi, 2001 cited in Khiabany, 2010, p. 93). Similarly, at the turn of the 20th century, there were no publications of scientific or special interest. In 1999, however 284 similar publications were available on the stands of which 172 were published by the state (Zare, 1999, cited in ibid).

The history of Iranian newspapers and publications can be classified into six periods; the first period (1836-1906) saw nearly 69 newspapers in aggregate most of which enjoying governmental support in direct cash. The second period (1906-1921) saw the Constitutional Revolution with 489 newspapers published during a short period of time largely owned privately by proprietors who tend to have a revolutionary mindset. The third period (1921-1941), refers to a political regime

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conversion from Qajar to Pahlavi dynasty while for the first time, the republican idea was promoted by newspapers. The fourth period (1941-1953) refers to the World War II and the ensuing occupation of Iran by the invading armies. During the period, the central government's sovereignty was undermined and, at the same time, the number of newspapers published nationwide soared to the surprising number of 2,682 in just 12 years. In the fifth period (1953-1978), newspapers came under the control of the government again and mostly included news and social issues. And, finally, the sixth period (1979-to date) started with the triumph of the Islamic Revolution in Iran (Mohajer, 2009 cited in Rezaei Nabard, 2012).

A TYPOLOGY OF NEWSPAPERS' SOURCES OF INCOME

In general, media revenue streams, including those of newspapers, consist of advertising, sponsorship, subscriptions, merchandising, market protections (subsidies, trade barriers and regulation) and restricted competition, either by design or default (Lowe, 2015). The governments' objectives to pay subsidies cannot be out of the three main following grounds: Optimum resource allocation, economic stability, and equitable distribution of the resources (Musai & Mehrara, 2011, p. 46). Currently, the government annually allocates a substantial amount of subsidies to the print media, both directly (cash in IRR & foreign exchange) and indirectly (allocation of low-cost paper, etc). The allocated amount is roughly 100 billion IRR per year (Musai, 2005 cited in ibid).

When talking about subsidies, it is essential to have a clear definition of the concept. As defined by the Ministry of Culture and Islamic Guidance, Press Subsidy is "the fund allocated in an annual budget to the ministerial department of Newspapers and Print media to pay directly to the authorized press. The pay criteria are the circulation, the period of publishing and the assessed quality" (18th report, 2011:10).

There are some special government departments and bodies dedicated to support the industries in Iran. As for newspapers, the mission has been assigned to 'Edareh Hemayataz Matbouat' or the office in charge of supporting the print media. The mission of this office is declared as "to absorb governmental supports under the relevant laws to be subsequently distributed among the print media in a fair manner". From the third quarter of 2009, the office has served as the authority to allocate the funds to the print media (18th report, 2011:10).

The governmental aids to newspapers and print media in Iran can be categorized as follows:

a. Direct funds
b. Governmental ads
c. Governmental subscriptions
d. Non-fund based supports (paper, publishing services, etc.)
e. Tax exemption
f. Welfare facilities to journalists
g. Ad hoc Helps

The categories are explained below using the available statistics.

A. *Direct funds*. The procedure for the allocation of subsidies is partly different for nationwide-circulation newspapers compared to the provincial ones. For nationwide-circulation newspapers, allocations were made four times a year for dailies, weeklies, biweeklies and monthlies, three times a year for bimonthlies and once a year for quarterlies and annuals. The fund quota is separately calculated for any given entity (18th report, 2011:11). The quota is determined based on the criteria specified in the following table.

Table 1: A sample blank form for the calcuation of subsidy (Source: Newspaper and Press Dept., 2011:12)

Title of newspaper or press	Period of publish	Circulation	Number of pages	Length of papers	Width of papers	Paper type	Support coefficient	Quality coefficient	Total payment

Table 2 shows the government aids to the print media paid as direct funds.

Table 2: direct funds to print media as of 2007 through the 3rdquarter of 2012 (in million IRR)

Year	2007	2008	2009	2010	2011	2012 (3rd quarter)
Fund	260,875,658	185,408,294	171,887,100	163,425,540	164,565,000	59,458,000

Accordingly, an aggregate of IRI 200 billion were paid to newspapers in 2009. Keyhan received the highest amount of the subsidies, namely 26 billion IRR for one year, an aggregate 60 billion IRR for the next three years (2010-2012). Iran, the official

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daily of the IRI government received 22 billion IRR. The five newspapers of Keyhan, Vatan-e Emrooz, Resalat, Javan and Asr-e Iranian, billed as conservative were allocated one fourth of the total amount of subsidies. Coupled with "Iran," the six newspapers received 80billion IRR. This is compared to 100 other newspapers that collectively received 120 billion IRR. A breakdown is 1.5 billion IRR for Hamshahri, 9 billion IRR for the IRIB-run Jame-Jam, 3 billion IRR for Jomhouri-e Eslami and 10 billion IRR for Ettela'at. While a significant amount of the subsidies was allocated to 'conservative' newspapers, those serving the opposition and reformist camp too have partly received such direct funds with Shargh, for instance, getting up to one million USD in the aggregate in 2005 and 2006. Shargh, Mardomasalary and Ebtekar make the three members of a 12-strong group of newspapers that recieved some 17 percent of the total governmental subsides.

B. *Governmental ads*. Newspapers can generate revenues in two ways: through advertisement or circulation, with advertisement seen by far the most dominant source of income (Doyle, 2016). This is the case with Iran too and even more conspicuous, considering the limited circulations and the relatively low price of a copy of newspaper here. From among different types of advertising, namely commercial ads and government ones, the latter helps newspapers to fetch a considerable amount of money, thus providing them with a secure source of income. The exact amount of government's spending on advertisement for any separate newspaper does not exist at least in fact sheets or official data though, a 2012 statistical indicators report provides some information about the total related funds the Iranian government paid to newspapers and print media for any single year as of 2003 through the third quarter of 2012. According to the report, in 2005 and 2007 the total government spending on advertising was 66 billion IRR (nearly 66 million USD) and 86 billion IRR while in 2007 the amount saw a dramatic rise and reached record 129 billion IRR ensued by a major drop to 60 billion IRR. Table 3 shows the total government spending in advertising.

Table 3: Total government spending on ads by given year in billion IRR (Source: 19thpress and news agencies exhibition report, p.66)

Year	2005	2006	2007	2008	2009	2010	2011	2012 (3rd quarter)
Total	66	86	129	107	84	50	60	73

Data show that those incomes were mostly made by the two newspapers of Iran and Keyhan. In a recent system modernization, deputy of press in the Ministry of Culture and Islamic Guidance launched an electronic system for the distribution of government ads among newspapers. In January 2016, the new system was claimed to be a means of fair distribution of those ads based on quality of newspapers.

Note that government spending on advertising in Iran is largely afforded by three official sources: Sabt-e-Asnad or the Properties and Real Estates Organization, Ministry of Justice, and the rest of governmental organizations and offices. According to the report, in 2012, 10 percent of the total governmental ads in Iran were ordered by Properties and Real Estates Organization while 28 percent was ordered by Ministry of Justice and the rest was ordered by other governmental bodies. The figures in the third quarter of 2012 were 7, 6 percent and 78 percent respectively.

In the 2011 national Budget, the price of a single government Ad tripled after eight successive years of remaining intact, helping increase the related income for many nationwide-circulation and provincial newspapers (Karnama, 2012, p. 20).

C. *Governmental subscriptions*. Government organizations largely subscribe to certain newspapers in many countries and Iran is no exception. The subscription serves as a kind of state aid to newspapers as it assures them about the sale of a certain number of their copies and the absorption of certain government ads in the future. Public newspapers are normally shortlisted for advertising, something that private newspapers complain about. It is however an accepted idea that public bodies have a right to select their favored newspapers for government subscription and, naturally, publicly-owned newspapers take pride of place.

D. *Non-fund based supports*. Paper and publishing costs are major items that come to mind when talking about non-fund based supports. The Iranian government helps the publicly-owned newspapers reduce their publishing costs by offering them publishing houses at a discount. As for the paper, the government has been committed to provide subsidized paper for all local, provincial and nationwide-circulation newspapers in a fair manner based on specified quotas. In cases where a newspaper requests to import its needed paper on its own, it shall be exempted of the related tariffs or import taxes (Karnama, 2012, p. 20).

Printing house services make an important component for those newspapers that receive non-fund based supports too. The printing houses are large-scale, state-owned corporations and prove vital for small-scale, press corporations. The state-owned corporations include Kayhan with 13 titles (including 3 dailies in Persian, Arabic, and English), Ettela'at with 8 titles (including 2 dailies catering to national and international readership) and IRIB (Islamic Republic of Iran Broadcasting) with 7 titles (including Jame-Jam daily), all published by the corporation's publishing body, Soroush Press. Other major firms with direct state links are the Iranian News Agency, IRNA (with seven titles, including Iran Daily), Hamshahri (best-selling dailies published by Tehran mayor's office), and Quds (controlled and published by Astan Quds Razavi , an administrative organization which manages the Imam Reza shrine in northeastern city of Mashhad)). These organizations enjoy their own state-

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of-the art print media and facilities due to massive financial resources and generous state subsidies (Khiabany, 2010, p. 130-131).

There are other types of benefits too, including substantial discounts for postal parcels, insurance, and certain salary tax exemptions. A 2012 report by the Public Relations and Print Media Affairs of the Ministry of Culture and Islamic Guidance cites the most important governments supports as follows: restructuring of subsidies granted to print media, modification of the subsidy system, improvement of distribution system, grant for the establishment of new branches abroad, expansion of insurance and social security coverage for all newspapers and print media practitioners, tripling of the price of government ads paid to newspapers, distribution of subsidized paper among all nationwide-circulation newspapers, and removal of import taxes and tariffs for paper materials newspapers purchase abroad on their own (Karnama, 2012, p. 15)

An important indirect government support is to grant free of charge coupons to people for the purchase of print media and cultural products. The Iranian government on many occasions including nationwide exhibitions or national ceremonies grants such coupons. Statistics in 2012 show that such coupons in a given year were mostly granted to the age group of 21 to 30, followed by the 31-40 and 41-50. Other age groups also took the benefit though in lesser amounts (Karnama, 2012, p. 137). The share of cultural expenditures as a ratio of total expenditures for the past 30 years has fluctuated between 1 to 6 percent (Khazaei, 2000, cited in Musai & Mehrara, 2011, p. 47). These coupons serve as a tool for leveraging the cultural expenditures in the portfolio of purchase and may be interpreted as an indirect support to the entire cultural industry, including the print media.

E. *Tax exemptions*. There are also other important items in the Iranian newspapers' economics that play a determining role in the survival and life of a newspaper. Tax exemption is one of them. According to the print media law, newspapers are exempted from certain taxes for cultural reasons. This usually makes a considerable economic support from the government to newspapers and other print media variations. The print media law explicitly exempts all newspapers and other print media variations from paying taxes. "Publications and print media, cultural and artworks done under a permit from the Ministry of Culture and Islamic Guidance are exempted from paying taxes" (Direct Tax Law, item139, L). It is comparable with some European countries where newspapers are exempted from direct taxes or value added tax, including in the UK where no VAT is charged on newspapers, effectively providing a form of public subsidy to newspaper readership. Many other European countries apply discounted or preferential VAT rates to the sales of newspapers, books and other products that convey 'knowledge'(Doyle, 2002, p. 120).

F. *Welfare facilities to journalists:* 'Edareh Khabarnegaran' or the press personnel office, as a subsection of the Newspapers and Press Department, is in charge of offering welfare facilities to press personnel and reporters. According to a chart published by the department (2011:40), the most important facilities include press cards, domestic and international version (with specific advantages), special stocks offered to certain less privileged classes of the society (Saham-eEdalat), coupons and gifts. Also, the office runs a "press support fund" to aid the press personnel with social security, insurance and loans.

Table 3: amount of facilities garnted to press personnel (Source: 18th Report, 2011: p68; 19th report, 2012:p76)

Facility	Stocks	Cultural coupon	Government gifts	Supplementary insurance	Mortgage loan
Year 2011	6874	7983	9200	687	N/A
First half of 2012	N/A	N/A	7623	1143	4721

The press support fund was established in 2008 to offer low-interest loans to press personnel. The loans paid to print media staff are shown in Table 4

Table 4: loans paid to press personel through the press support fund (2011: p72)

Year	2008	2009	2010	2011 (first half)
Total Amount	111	152	142	109

Notable are 4721 mortgage loans allocated to journalists as of 2011 through the first half of 2012. Also supplementary insurance coverage, at 687 as of 2010 through September 2011 reached 1143 in 2011 through the 3rd quarter of 2012.

G. *Ad hoc supports*. In many cases, the government helps newspapers and the print media in ad hoc ways upon their requests or as contingency. For example, mostly in the annual print media exhibition, the government offices grant funds to certain newspapers and press, or on some occasions, they grant certain supports in the form of either fund or non-fund. However, no official figures were available about the amount or size of these ad hoc aids and the overall category was mentioned in order to provide a clearer outlook to the economics of newspapers and print media in Iran.

AN INCOME-EXPENSE ANALYSIS

Figure 1 illustrates incomes and expenditures of newspapers in Iran. Although the households and industry customers play a considerable role in the newspapers' economics, the role of government, directly or indirectly, is dominant. The income side of newspapers in the figure shows that the government is a major provider of income by direct funds, government advertising, government subscriptions, non-fund based

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supports and ad hoc help. In the expenditure side, paper and publishing discounts, tax exemptions, social security and insurance facilities are the most important items. The figure shows that the government plays an important role in the other ways too; the government enables and motivates households to demand and purchase print media items by coupons and special subsidies in the demand side. These kinds of indirect supports leverage the demand and increase the incomes of newspapers. The same kind of funding appears in the industry side where many companies and firms have to publish legal announcements in newspapers to get some allowance for changes in ownership and other legal items. Since these advertising incomes are different from commercial ones, they are classified as indirect supports of state; the main cause of difference is that by law, business and industry are required to publish some information in the newspapers so as to be considered as legal. This includes updates on changes to the board of directors, new shareholders, change of address, etc.

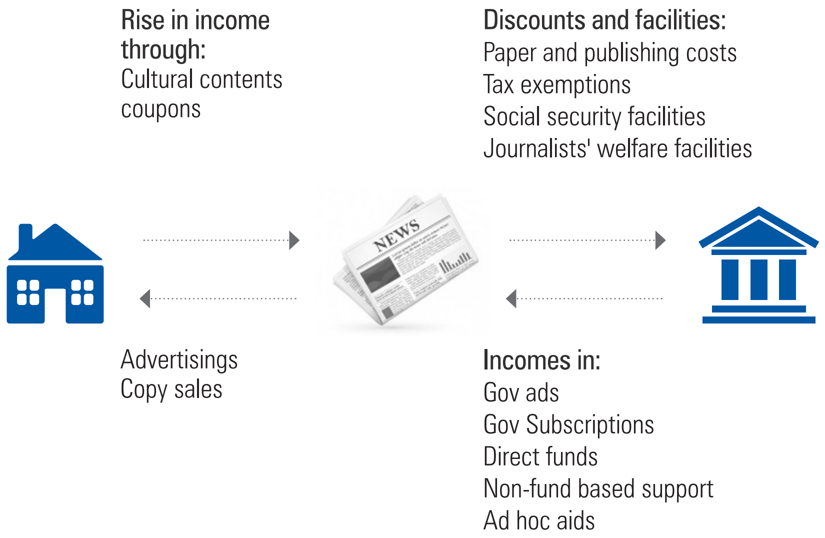
The combination of the expenditures of a paper also includes the costs of such activities as editorials, page layout, film and zinc plate preparation, print and distribution. These expenses have relatively fixed prices in the market and could be estimated for each paper in proportion to circulation and scale of production. Of note is the fact that the combination and types of the expenditures are almost the same and could be generalized to all papers which may not present their information (Musai & Mehrara, 2011, p. 50).Based on the typology of expenditures, the government provides the newspapers through four types of supports: 1-paper quota,2- publishing discounts, 3-tax exemptions, and, 4-welfare facilities for journalists.

In the case of revenues, government supports newspapers through five types of direct and indirect payments including 1) direct funds, 2) government advertisings, 3) tax exemptions, 4) non-fund based support, and, 5) ad hoc support.

Figure 1 illustrates the government aids through the income-expenditure approach. Accordingly, government-supported newspapers enjoy the above-mentioned aids on an income side. Similarly, the expenditure side includes facilities and discounts for paper and publication costs, tax exemption, social security facilities and specific assistance and support for improving the welfare of journalists such as mortgage loans and authorization in traffic-restricted areas of Tehran. There is also an implicit indirect government help on the household side that is coupons allocated to cultural contents that help encourage people to increase the levels of cultural products in their purchase portfolio and subsequently enhances the newspapers' income.

It is worth noting, such a "cultural protectionism", like any other types of protectionism, would be better described as inefficient and fully corrupted. There are hundreds of officially licensed non-existent newspapers and magazines, only registered by well-connected cronies to receive the so-called cultural subsidies.in such an environment, not surprisingly, providing better offer for customers (i.e. citizens) would not be the most important concerns of media industry incumbents. Here, bargaining with government officials to get further privileges might be a better option.

Regarding Louis Althusser's notion of "the ideological apparatus of state", every modern government employs the media to sustain and maintain its authority over citizens. It is completely natural that the government tries to use these effective tools to control the civil society; to gain support of political interest groups or keep them docile. Actually, one should address providing aids and subsidies for the media by the government as some sort of bribing the political opponents. Obviously, the above-mentioned "cultural" supports are politicalized in nature. It is not about so-called culture but politics.



Supplementary Data

Number of Issued Licenses

The number of licenses issued by the Press Supervisory Board is an indicator of demand for newspaper publishing. Based on the statistics, shown in Table 1, the Ministry of Culture and Islamic Guidance licensed 168 new publications, including seven dailies, 27 weeklies, 59 monthlies and two annual publications during 1998-1999 (Khiabany, 2010, p. 129).The figure rose to 333 in the following year. The number of publication licenses granted in March 1998 rose to 1,055 (in aggregate). However, the figures may not present a sufficiently real picture as a number of the permits have never led to publishing. There were 828 publications available on the stands while 227 ones never printed a single copy despite having licenses and 615 ones were completing the procedures of license application. (Resaneh Quarterly, cited in Khiabany, 2010, p. 129). Table 5 shows the total circulation of newspaper and total print media in the given years.

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Table 5: Number of licenses issued in 1990-2000 (Source: Bahrampour, 2002: 85 in Khiabani, 2010:131)

	1990-92	1993	1994	1995	1996	1997	1998	1999	2000
Number of Licenses	282	69	70	105	116	281	168	333	62
% of accepted applications	18.9	4.6	4.7	7.1	7.8	18.9	11.4	22.4	4.2

These figures raise a basic question as to the supply and demand balance in the industry: while the rate of return in the newspaper industry is not satisfactory enough to encourage many editors to publish the newspapers they have licensed for, why is there such a great demand for publish permits? Ironically enough, issued permits rose dramatically in the final years of the period under study. The government's plan for restructuring the subsidies starting in 2009 might have been behind the increase. Table 6 shows that in 2011, record 808 permits were issued for the print media corps.

Table 6: Number of licenses issued in 2005-first half of 2012 (Source: 19th Report, 2012:23)

Year	2005	2006	2007	2008	2009	2010	2011	2012 (6 months)
Permits issued	460	424	238	398	265	206	808	104

Circulation

A study of the circulation figures of the newspapers would help better understand the industry size. Table 7 offers insightful data about the newspapers in particular, and the print media as a whole. Total circulation of newspapers in 2011 reached nearly one billion copies, while at the same time total print media circulation reached 1,333 million copies nationwide. In total, compared with the current population of the country (75 million), the circulation is still low (Khiabany, 2010; Musai & Mehrara, 2011).

Table 7: Total circulation of newspapers and print media from 2005 until the 3rd quarter of 2012 in million copies (Source: 19th press and news agencies exhibition report, pp 67-68)

	2005	2006	2007	2008	2009	2010	2011	2012 (six months)
Newspapers	987	932	960	862	1047	995	904	403
Total Print media	1278	1238	1328	1235	1454	1431	1333	577

Total circulation of newspapers in Iran amounts to 1 million a day, according to some internal organizational memos, indicating that the industry has yet to become a profitable business and instead survives on state aid. The reality speaks for itself how the newspaper economics are affected by state intervention.

Ownership

Another important trend to get a clear image from the industry in Iran is the size of private sector. Table 8 indicates that in a period of about four years the volume of authorized press doubled, and 'private' titles were the main beneficiary of the trend. Figures show that in 1999 about 40 percent of the Iranian press were owned and controlled by the state (Bahrampour, 2001 cited in Khiabany, 2010). In the Iranian context, the term 'private' implies that persons or non-governmen organizations own more than fifty percent of the newspaper. It does not necessarily mean to be commercial, nonpolitical or neutral. Recent data released by the Ministry of Culture and Islamic Guidance shows a growing confidence in the private sector and a rising desire for investing in the press market (Khiabany, 2010).

Table 8: Authorized press 1996-2000 (Khiabani, 2010:131)

Year	Total	Privates	Public organizations	NGOs and institutes
1996	662	338	223	101
1997	800	444	239	117
1998	905	523	254	128
1999	1018	610	268	140
2000	1207	724	290	193

SUBSIDIES RESTRUCTURING IN IRAN

Over the past decade, the Iranian economy has turned to privatization as an approach to restructuring and optimizing the existing economic capabilities. Accordingly, many public-owned industries are being sold to private firms or individuals. One of the most important steps to that effect has been the process of repurposing the

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subsidies (Hadafmandi –e- Yaranehha) designed and carried out in order to optimize the structure of subsidies. Under the scheme, many lines of subsidies were converted into cash payments to consumers and producers in an effort to help them afford an increase in prices. While the long-term consequences of the scheme are still unclear, we may discuss its possible effects on the newspaper and print media industry.

There are few available official data in record as to the amount of subsidies, however officials interviewed by the authors said in 2012, government paid nearly 16,215,000 IRR in direct payment to make up for the removal of some other non-fund based supports. Also, 9,360,000 IRR was paid to provincial newspapers in a half year period. It should be noted that even with the cash payments in place, the government still granted 2,055 tons of paper to the nationwide-circulation newspapers and 610 tons to provincial ones as a remedy for the likely problems they may face before they fully adapt to the new subsidy mechanism.

Before 2007, authorized print media received subsidized paper materials as a support. Afterwards, the government, for repurposing reasons, allowed the newspaper managers to choose either to get paper as before or receive aid in cash and spend it as they deem appropriate. This was a major step in having the newspapers manage their own finances and wean their industry from the subsidies in favor of revenue creation.

The business of advertising has undergone radical changes. "The push for control of attention, creativity, measurements, and inventory will reshape the advertising value chain and shift the balance of power" (Khajeheian & Friedrichsen, 2017, p. 344) so that advertising funds are shifted to new formats to exploit new opportunities. The shift will reshape the future of newspapers' income sources. The restructuring of public aids is a step towards the adaptation of the Iranian newspaper industry to this changing world of modern media. Iranian policy makers expect the newspapers to adapt themselves with the new business models, namely through social media presence, redesigning of their value network and adopting mobile platforms. In a step towards digitalization, the government boosted direct aid to those newspapers and print media that run websites or serve in cyberspace. This would also help the newspapers to benefit from the web platform for better connection with their readership and save considerable amounts of money in terms of paper and publication costs. Other motivations are to provide access to archives and to engage with the readership in an interactive way as stated by the Ministry of the Culture and Islamic Guidance (18th Report, 2001:95). The incentives have already given rise to the desired effects as shown in the growing number of news websites during the recent years. In 2010 and 2011, between 525 to764 news websites were registered in the country respectively, followed by 405 in the first half of 2012. The growing trend shows a tendency on the part of the Iranian newspapers and print media for moving to the web so as to reduce their expenses on paper, publishing and distribution.

The related effects are still unclear as this process is ongoing. The authors however recommend the researchers in the field of media economics study the relevant outcomes of the change in state aid policy. That would provide a major advance in the study of the Iranian media economics.

Entrepreneurial way ahead: new business models and strategies

The big question is the effect of restructuring the subsidiaries on the newspapers and printing press in Iran. As Musai (cited in (Musai & Mehrara, 2011)) explained, the system of subsidy payments to the print media had a very low level of positive effects on the Iranian print media, thus change in the system of subsidiary may drive the system to the more productive usage of the resources and better implementation of the business practices. We as the authors in this section try to forecast optimistically the impacts of the process currently underway in Iranian economy on the newspapers. This is a certain trend that any evolutionary activity of government causes many positive and negative effects together, and it is not possible to decisively predict the future results; therefore we analyze the rational expectations about the future of the industry, based upon the observations and discussions with many journalists and members of the editorial boards.

As a very fast-emerging trend, a dramatic increase in acceptance of requests to permit issue is underway. According to 2012 report, while overall previous years the number of requests was considerably more than the issued permits, in 2011 a dramatic change occurred; the number of requests was 146 and the permits issues rose to 878! This technically means almost all requested made in the previous years and the current year were responded. Also in the 3th quarters of the 2012, almost all requests to issue the permit were responded. When we consider the previous trend of huge requests to obtain the print media establishment permit, we see that in the 2011, as the first year of implementation of repurposing subsidiaries process, the requests decreased nearly half of the average (Report 2012:51). Now we can review the question Musai & Mehrara (2011) asked about a contradictory trend in Iranian newspaper industry: “when the investment does not have a reasonable rate of return, why demands for publishing permits is a multiple of the present number of the printed press?” (2011:46). Refer to the 2012 report of Ministry of Culture, in the years 2011 and 2012 in consequence of the process of restructuring the subsidiaries, the applications decreased, while the pace of issue the permit increased dramatically. This caused the request backlog from the previous years (nearly 3000 applications based on (Musai & Mehrara, 2011)). Most of the publish permits issued in previous years were never used due to the difficulties, with many people selling or renting them to other applicants. One of the reasons was getting some margins from quota and subsidiaries which government donates to printed media. Now, with the removal of such indirect subsidiaries which may end up in the black market, the true applicants who really want to publish the newspaper, will be staved off by the black-market practitioners. One of the main reasons is the restructuring of the subsidiaries and moving toward cash funds. This made transactions more transparent and expected to facilitate the industry performance.

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Any infrastructural change in industry, is expected to make some pros and cons. Many of old fashion and inefficient companies go bankrupt and get out from the market and many new enterprises enter the market with new business models. This is the dynamics of the market and makes markets more efficient and adaptive towards the changes. In the Iranian newspaper industry, the process of restructuring the subsidiaries is expected to inch closer to new business models and a REMEDIATION of the media corporations. Remediation, in general, implies the renewal of a traditional media to a new one with the help of technology. For example, radio remediated to podcasts with the help of internet to keep the listeners. When we talk about corporation remediation, this means a structural change in the enterprises' activities in the industry, their business models, strategies, concepts and the financing, production, distribution and exhibitions processes.

One of the entrepreneurial activities of Iranian newspapers has been introducing a competitive advantage and using it to expand their readership. That is part of the cultural and political interests, which naturally Iran seeks. Using three types of similarities: 1) the language (Persian is common among Iran, Afghanistan, Tajikistan and for some minorities in parts of Uzbekistan, Iraq, Turkey and Arab states in the Persian Gulf), 2) Religious School (Shia'a Islam, practiced by the majority of people in Iran, Iraq, Azerbaijan and neighboring countries), 3) Ideological tendencies. Many media outlets used these three types as the competitive advantage and tried to expand their audiences abroad. The establishment of Iranian multilingual news website is a sign. Table 11 shows that 28 websites in English have been established, with 258 websites both in Persian and English, and 95 others launched and publishing content in three popular languages of the region. Many of these websites were already multilingual before moving to the web, but failed to expand by old business models of printing.

Also new news models are emerging as traditional models break down (Khajeheian, 2016). The newspaper industry is in need of a new business model because the old model lacks the processes and resources to immediately determine how new opportunities, when they arise, may be exploited. "A large number of newspapers are focused on the overlap of the online and print business and have overlooked the opportunities that disruption has created" (Gilbert and Ure, 2005 Cited in Johnson & Gutierrez, 2010:74). Some of the newspapers also used new interactive technologies to update the information Iranian readers eagerly want to know instantly, such as the exchange rate. They established the servers which frequently send the special news on request. Many of them become very popular and have a considerable income both from advertising and subscriptions.

Table 11: The Websites in different Language (Source: 19th Report, P73)

	Persian	English	Arabic	Persian-Arabic	Persian-English	Persian- English-Arabic
Number	1988	28	2	4	258	95

Media Entrepreneurship Promotion: An Expecting Consequence

It seems that what occurs in Iran is a good experiment for media entrepreneurship and economics researchers and also for media policy makers to see what the real consequences of restructuring the subsidiaries are in an economy. Numerous efforts have already been made during the past two decades to restructure the Iranian economy and turn it into an agile and efficient one. In spite of many economic reforms, the whole structure of the economy remains highly dependent on the crude oil and petroleum revenues. The 20-year national vision document of the country (Iran 2025 vision) envisages Iran a top economy in the Middle East region highlighting the free-market approach which fosters the agile and productive private enterprises. Recent economic decisions called the "scheme of economic evolution" aim for the above-mentioned target. This provides an academic opportunity to investigate and observe how the activities, plans and implementation of scheme enable the economic development according to the intention of the policy makers. Beyond what will result in reality, we mention and explain the expected consequences of the changes, and view them as an economic experiment to see how the restructuring of subsidiaries may result in promotion of media entrepreneurship in a developing country, and analyze the efficiency of government activities and strategies.

Achtenhagen (2008, p. 138-139) describes media entrepreneurs' role as change agents in society, by fulfilling five functions. Firstly by adopting a mission to create and sustain some kind of artistic, cultural and/or societal value (not just economic value), secondly, by recognizing and relentlessly pursuing new opportunities to serve that mission, thirdly, by engaging in a process of continuous innovation, adaptation, and learning, fourthly by acting proactively without being limited to available resources, and finally by showing a heightened sense of accountability to the constituencies served and for the outcomes created. (Dutta & Crossan, 2005) argue that the entrepreneurship phenomenon heavily impacts media industries as long as they, in their very nature, fall into the culture and creativity-related businesses. The essential characteristics of the entrepreneurial activities such as creation, innovation and novel ways of thinking are critical in building media business success.

Media Entrepreneurship has been defined as "taking the risk to exploit opportunities (through creation/discovery) by the innovative (radical/incremental/ imitative) use of resources (through ownership/control) with a view to transform an idea into activities that generate value (creation/delivery) in a media form (content/

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platform/user data) and meet the need of specific market segments (businesses or consumers)" (Khajeheian, 2017, p. 102). According to the both definitions, it is expected that by the restructuring of subsidiaries, the business context of the country be prepared for risk taking activities of media firms to identify and exploit the market opportunities. The market in developing countries is characterized by niche markets and profitable segments capable of meeting their needs and making margins for enterprises. Thus, the media enterprises are expected to act in these markets entrepreneurially and open up the niche markets and yield the profit.

The business models and strategies are the tools helping the firms to act creatively and exploit the opportunities (Khajeheian, 2018b). Shifting toward digital platforms has been a trend on global media markets, to meet the increasing need of building immediate and interactive relationship with the audiences (Roshandel Arbatani et al., 2019) as well as the staff inside the organization (Khajeheian, 2018a). Presence in the web space needs new business models to survive the media and guarantee the required profit to continue (Bali & Zarea, 2018; Karimi & Salavatian, 2018; Labafi & Williams, 2018; Nel et al., 2020; Nel et al., 2020; Salamzadeh & Roshandel Arbatani, 2020; Salimi et al., 2012; Su & Zarea, 2020).Thus the new business models should be capable of keeping the newspapers alive in the new platforms. Most of the Iranian newspapers use the advertising model which consists of completely free content for readers combined with ads. However recently - months before the authorship of this paper- two Iranian newspapers with considerable circulation have turned to the paid and subscribed model. Donyaye Eghtesad and Shargh have recently restricted the access to their online content to the paid members. In fact, they are using a kind of freemium (free + Premium), means some free content combined with premium contents which only paid members can access. Unfortunately, in this period of time no one published any report on the subscriptions and people who paid to access the online content. Once published, it will be of great significance to analyze the data on the first Iranian newspapers' efforts to offer the non-free content on the web. If favorable, this may encourage other newspapers to follow this business model on the web.

CONCLUSION

This article illustrated a big picture of the Iranian newspaper industry economics with perspective focus the on government-support system. This system has some similarities and differences in comparison with many other cases explained in other research studies. This is not surprising, because Iranian system is a different one, in different region, with a different structure raised from its own historical and cultural background. However, this study showed that the Iranian government has predicted a mechanism to support the newspaper industry to survive and be profitable. But there is something which makes the Iranian case distinguishable to learn: the restructuring subsidiary system in the whole economy of the country. As the government tried to liquidate the subsidiary and pay the money directly to the consumers and producers and convert the prices of products to the real global prices, a great challenge arises which is at the same time, a very interesting real experiment to see how newspaper and the print media counters the challenge and survive, and how it renews itself to adapt to the new economical situations. As the process has not been completed yet, nothing can be said decisively, but we can predict and forecast the future trends of the industry. It is predicted that many newspapers will get out of the market and many of them will become unable to resist the changes. But this may lead to the emergence of newcomers with new business models and strategies which fit the new economic environment best. The web is the most suitable platform for the news agencies and newspapers to move to and exploit the available potentials to address the new readers and expand their markets. In this context, government may change its role from the direct sponsor, to a back supporter with providing infrastructures, economic resources and international interests which can result in flourishing the media industry.

Online journalism is the continuity of the traditional journalism in newspaper format, as Cole & Harcup explain "Journalism itself is more important than where its products are published [...]. So preoccupied have media owners and managements become with the process of publishing and the variety of opportunities modern technologies allow that debate over how and where to publish has drowned out the more important question of what to publish. The fashionable use of the generic word 'content' instead of news and information has a significance that goes beyond the semantic. Content is simply what occupies the space and to use it to describe the products of journalism is to devalue the spirit and practice of intellectual inquiry and analysis that is the hallmark of good journalism (Cole & Harcup, 2010, p. 6) . Thus, the emerging online journalism is the expansion of the newspaper industry to the new platform of web, which is more adaptive with the economics and preferences of audiences and opens up the opportunities within the transformation, providing the basis for media entrepreneurs.

In conclusion, the results of new evolutions in Iranian economy as a whole, and in newspaper industry specifications, are not clear. This is the first step to shed some light on an such revolutionary process and many cons and pros are ahead of the industry. So as the academics, it seems wise to explain the expected consequences and forecast the possible scenarios for the future of this industry in Iran.

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ENTREPRENEURIAL USE OF GAMIFICATION FOR KNOWLEDGE SHARING INSIDE ORGANIZATION; A PUBLIC SERVICE MEDIA FROM MIDDLE EAST

USO EMPRESARIAL DE LA *GAMIFICACIÓN* PARA EL INTERCAMBIO DE CONOCIMIENTO DENTRO DE LA ORGANIZACIÓN: MEDIOS DE COMUNICACIÓN DEL SERVICIO PÚBLICO DE ORIENTE MEDIO

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RECEIVED: 18/12/2020

MODIFIED: 05/02/2021

ACCEPTED: 06/03/2021

DOI: https://doi.org/10.17230/Ad-minister.39.6

ABSTRACT

Knowledge as an organizational resource in media businesses has become increasingly important in a competitive environment. There is a growing interest in developing new techniques to enhance knowledge sharing between people, that is conducive to media entrepreneurs. One of the main barriers to knowledge sharing in communicating entrepreneurs is the lack of motivation which can be improved by using gamification. The aim of this research is to achieve a better understanding of the gamified knowledge sharing process to improve organizational entrepreneurship among TV employees. We conducted semi-structured interviews with 15 employees and managers of the IRIB organization. Qualitative analysis of the research data was conducted in three steps: transcribing data, coding and organizing categories. Most of IRIB's employees inspired by intrinsic motivations include status, power, learning, autonomy, and community. Security is the only and most critical extrinsic motivation in IRIB organization. Moreover, we have found four categories of user types, namely achiever, socializer, discoverer, and survivor. Our study identified the main motivators of media staff that create a sense of happiness and motivation to participate in organizational entrepreneurship via knowledge sharing. Finally, we offer new insights about the media employees' user types in the gamified knowledge sharing system.

KEYWORDS

Organizational entrepreneurship, Corporate entrepreneurship, Media entrepreneurship, Gamification, Knowledge sharing.

RESUMEN

El conocimiento como recurso organizacional en las empresas de medios de comunicación se ha vuelto cada vez más importante en los entornos competitivos. Existe un interés creciente en el desarrollo de nuevas técnicas para mejorar el intercambio de conocimientos entre las personas, lo que favorece a los emprendedores de los medios de comunicación. Una de las principales barreras para el intercambio de conocimientos en la comunicación de los emprendedores es la falta de motivación, que puede mejorarse mediante la *gamificación*. El objetivo de esta investigación es lograr una mejor comprensión del proceso de intercambio de conocimientos de *gamificación* para mejorar el emprendimiento organizacional entre los empleados de la televisión. Realizamos entrevistas semiestructuradas con 15 empleados y

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gerentes de la organización IRIB. El análisis cualitativo de los datos de la investigación se realizó en tres pasos: transcripción de datos, codificación y organización de categorías. La mayoría de los empleados de IRIB se inspiran por motivaciones intrínsecas que incluyen estatus, poder, aprendizaje, autonomía y comunidad. La seguridad es la única y más crítica motivación extrínseca en la organización IRIB. Además, hemos encontrado cuatro categorías de tipos de usuarios, a saber: triunfador, socializador, descubridor y sobreviviente. Nuestro estudio identificó las principales motivaciones que crean un sentido de felicidad y motivación en el personal de los medios de comunicación para participar en el emprendimiento organizacional a través del intercambio de conocimientos. Por último, ofrecemos nuevos conocimientos sobre los tipos de usuarios de los empleados de medios de comunicación en el sistema de intercambio de conocimientos de *gamificación*.

PALABRAS CLAVE
Emprendimiento Organizacional, Emprendimiento Corporativo, Emprendimiento de Medios, Gamificación, Intercambio de Conocimiento.

INTRODUCTION

In a competitive and unpredictable environment, media companies have to employ organizational sources, such as knowledge, in order to adapt to changes (Roshandel Arbatani et al., 2018; Costello & Oliver, 2018a; Eisape, 2020; Labafi et al., 2017; Murschetz et al., 2020; Nel, et al., 2020; Powers & Zhao, 2019; Roblek et al., 2014; Salamzadeh et al., 2019) and to create organizational value by extracting opportunities (Bali & Zarea, 2018; Khajeheian, 2018; Labafi, 2017; Sharifi et al., 2019; Omar Bali et al., 2020) .

Knowledge is widely spread among media employees, and entrepreneurship depends on the sum of individuals' contributions (Kuratko, Ireland and Hornsby, 2001). A Media organization needs an appropriate motivational system, because employees at state-owned media agencies or public-funded agencies may differ in their motivations to share knowledge (Costello & Oliver, 2018b; Tajeddin et al., 2018). Motivation is considered as one of the important factors of communication between people in entrepreneurial teams, and the diversity of people's incentives should be addressed by good motivational system (Mládková et al., 2015) . According to Dale (2014) "what motivates one person may have the opposite effect on someone else. To this end, it is important to recognize the different motivational triggers" and user type. All people in firms are not sociable or altruistic in knowledge sharing (Andriessen, 2006; Dale, 2014) while, their motives are not limited to monetary incentives (Hendriks, 1999). A good employee engagement program in the organization allows employees to unlock their potentials, increase commitment and enhance their sense of well-being that is conducive to innovative products (Costello & Oliver, 2018b; Rožman et al., 2017).

There is a growing interest in developing new techniques to enhance knowledge sharing between people, that is conducive to creating innovative products (Mládková et al., 2015). In recent years, gamification gained a lot of interest in business fields (Swacha, 2015). Gamified programs addressed the challenges by adding enjoyment, funny layer and game mechanics that provide reciprocal benefits and motivational drivers to beneficiaries(Silic & Back, 2017) and also by attracting employees for engaging in the entrepreneurial process (Emami et al., 2020).

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As a media organisation, the Islamic Republic of Iran Broadcasting (IRIB), as a media organization, operates in a highly competitive environment and needs to be innovative in processes and products (Karimi & Salavatian, 2018; Sharifi et al., 2019; Salavatian et al., 2020). The question raised here is how a TV network can collect employees' creativity at the corporate entrepreneurship level by motivating them to participate in the gamified knowledge sharing process. In the entrepreneurial approach, knowledge sharing and its elements, such as motivation, in public service broadcasting are important in responding to environmental changes (Labafi et al., 2017). Thus, in this paper, we studied the gamified knowledge sharing system as a possible and efficient solution to address the current problems of entrepreneurship in the IRIB organization. Research questions are as follows:

RQ1: What are the main motivational needs of TV employees of IRIB to engage in the knowledge sharing process as collective entrepreneurship?

RQ2: What are the User-Types of TV employees of IRIB in the knowledge sharing process as collective entrepreneurship?

LITERATURE REVIEW

Knowledge sharing

Foss et al. (2010), defined knowledge sharing as a "provision and reception of know-what and know-how performing tasks among organizational members". Van Den Hooff & Ridder (2004), define knowledge sharing as "a process that consists of both pieces of knowledge bringing (donating) and getting (collecting). Knowledge donating, communicating to others what one's intellectual capital is; and knowledge collecting, consulting colleagues to get them to share their intellectual capital." In Hendriks (1999) knowledge sharing definition, " knowledge sharing presumes a relation between at least two parties, one that possesses the knowledge and the other that acquires knowledge. The first party should communicate its knowledge, consciously and willingly or not, in some forms or others (either by acts, by speech, or in writing, etc.), The other party should be able to perceive these expressions of knowledge and make sense of them. In this definition, reconstruction of knowledge is needed to learn by the receiver.

Drucker's prediction about the new economy in the media management literature is critical, which points to the knowledge of employee and the ability to apply this resource in the creative process (Artero & Manfredi, 2015); it came true with the emergence of concepts and approaches such as knowledge-based resources and intellectual capital that provide new business areas for media firms. Unlike property-based resources, knowledge-based resources helped to stable performance in an uncertain and unpredictable environment (Artero & Manfredi, 2015; Labafi, 2017; Miller & Shamsie, 1996; Su & Zarea, 2020), which is relatively unique (Khajeheian, 2016; Oliver, 2016). Knowledge in media firms is considered as a valuable asset to gain competitive advantage(Khajeheian & Ebrahimi, 2020; Misci & Uzunoglu, 2008), respond to the needs of consumers and tackle the problems of industries, so the development of organizational culture and convincing employees to get more engaged in sharing their knowledge with each other is required (Faustino & Ribeiro, 2015; Roblek et al., 2014).

Limited innovative ideas emerge while many creative people work inside media organization such as television, emphasized the need for the management of media professionals who have distinct capabilities for the success of firms (Artero & Manfredi, 2015; Khajeheian & Friedrichsen, 2017). In other words, media expertise and skills that are stemming from work experience and facing challenges tend to rest on tacit capabilities (Dwyer, 2015; Küng, 2008). An organization cannot be aware of these capabilities unless the individual puts them to use (Misci & Uzunoglu, 2008).

Knowledge sharing as an essential process of generating new ideas and creative media products in media firms (Labafi & Williams, 2018)transforms individual knowledge into organizational knowledge. Participation of employees in this learning process and sharing their knowledge and their ideas, facilitate solving problems and developing new ideas (Harjanti & Noerchoidah, 2017; Hendriks, 1999; Labafi et al., 2017; Lin, 2007). The use of knowledge sharing tools promotes organizational citizenship behavior among the personnel (Emami et al., 2019; Estiri et al., 2018).

Given the issues discussed in this research, the authors chose a definition of knowledge sharing in which knowledge donors and knowledge recipients collaborate to solve problems and create new ideas that led to creating knowledge-based media content. The donation of knowledge is related to the production of media content and communication with colleagues about their intellectual abilities while receiving knowledge is about requesting colleagues to share their intellectual capital.

Motivation

Mierzejewska (2011) argues that the attention of the media management scholars to motivation is negligible. However, in other areas, many studies indicate organisational processes and activities are successful when members of the organization participate in the learning process (Law et al., 2017). The flow of knowledge turns the organization into a creative place (Misci & Uzunoglu, 2008) that leads to finding new, creative and effective ideas. Because Public Broadcast Service organizations compete with private and nonprofit media organizations, the flow of knowledge in these organizations, notably in the IRIB as a traditional media organization, is critical.

Considering the increasing role of audiences in the co-creation of value in public service broadcasts (Khajeheian & Ebrahimi, 2020; Khajeheian & Tadayoni, 2016), and also in sharing information as user-generated content in the areas that previously were exclusively used by public service broadcasts (Kamboj et al., 2018), the necessity of motivating personnel to share their knowledge becomes more important. A critical question from classical to contemporary management theories is “how to motivate

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employees to share their knowledge?" To answer this question, there needs to be more focus on motivation theories and practices from Maslow's needs hierarchy to Self-determination theory, and also their impact on people's willingness to share knowledge. Hall (2001) argues that organization motivational strategies should offer different alternatives for those engaged in the knowledge sharing process. An employee can win "hard" reward such as money, salary increase and other services. Alternatively, "soft" reward such as belonging to a community, recognition and personal satisfaction drive employees to share their knowledge.

In the field of management, motivation theories are categorized into Content or Process type. Content-based theories address the internal individual factors; in contrast, process-based theories focus on how individual behaviors have been affected (De Vito et al., 2018). In content theories, the most popular and well-known theory is Maslow's needs hierarchy (Hendriks, 1999). Nowadays, in some cases, Maslow's hierarchy of needs can offer appropriate practices for an organization suffering from employees' lack of motivation, particularly for those who desire tangible rewards such as salary and safety (De Vito et al., 2016).

Based on Maslow's hierarchy of needs, manager, in addition to the basic needs, can respond to the developmental needs of employees throughout their career progressions. So, at the bottom of the hierarchy, there are physiological needs, likes high salaries. In the second tier, the employee wants safety and security in the workplace (Goodarzi et al., 2018). These two tiers are essential in job design. The need to belong to a community that improves efficiency with a supportive and collaborative workplace is in the third tier. In Forth tier, the need for esteem indicates that employee likes to be recognized by co-worker and others for their achievement and hard work. The need for self-actualization is on the top of Maslow's hierarchy (De Vito et al., 2016). Both of Stotn and Walker and Tampoe studies show that motivations for knowledge sharing rather than money or good relationships with co-workers, come from the three highest tiers of hierarchy and are related to self-actualization (Hendriks, 1999).

On the other hand, Hendriks (1999).argues that Maslow's hierarchy of needs has been criticized in some cases; such as the hierarchy of needs doesn't cover how behavior is affected. In spite of criticism to Maslow's theory, the reason why authors choose this theory is to identify motivational needs of the employee. (Werbach Kevin & Hunter Dan, 2012) argued that a good design process melds creativity and structure to match people's needs with technical feasibility and business realities. Additionally, based on (Dale, 2014) study, identifying personality types and motivational needs are important in the design of the motivational system. Because employees are in different characteristics categories, so any kind of motivation does not have the same effect on different characteristics.

Werbach Kevin & Hunter Dan (2012) offer a design framework for developing gamified systems, and within this framework, the players should be identified. It should be noted that not all users are the same, and also, there are World of Warcraft players who do nothing but engage in player-to-player combat and others who spend all of their time exploring the world through solo quests. Similarly, gamified platforms can appeal in different ways to different groups (Werbach Kevin & Hunter Dan, 2012). To design the gamified knowledge sharing system in this research, a user type model is needed.

Rod King in his Business Model Gamification (King, 2013) catered a useful reference about user-types and categorized his hierarchy based on Maslow's theory in four user-type (see Figure 1). king's model is used in this research because identified the survivor type of user, which was not mentioned in previous models:

Achiever: achievers love the rush of leveling up or earning a badge (Werbach Kevin & Hunter Dan, 2012). An achiever in Amy j Kim's work is identified as Express. Self-expression is a popular User-type in gamification and modern social gaming and social media that must be considered by game designer and manager of the organization in motivating people. This type of people enjoys showing who they are by their abilities, and status (Dale, 2014)

Socializer: Socializers want to engage with friends (Salamzadeh et al., 2017; Werbach Kevin & Hunter Dan, 2012) and be part of an organization as a community that is larger than people. Socializers like to share with others in victories. Collaboration is the main foundation of Q&A systems and social media (Dale, 2014)

Discoverer: discoverers want to explore new content (Werbach Kevin & Hunter Dan, 2012), new people and also learn new things. To motivate explorers in the gamified system, the designer should use "access" as a motivator (Dale, 2014).

Survivor: they wish only to demonstrate their superiority over fellow humans (Werbach Kevin & Hunter Dan, 2012). Survivor's emotions in organizational contexts, such as fear, insecurity encourages people to compete with colleagues and overcome them (Sahdev, 2004).

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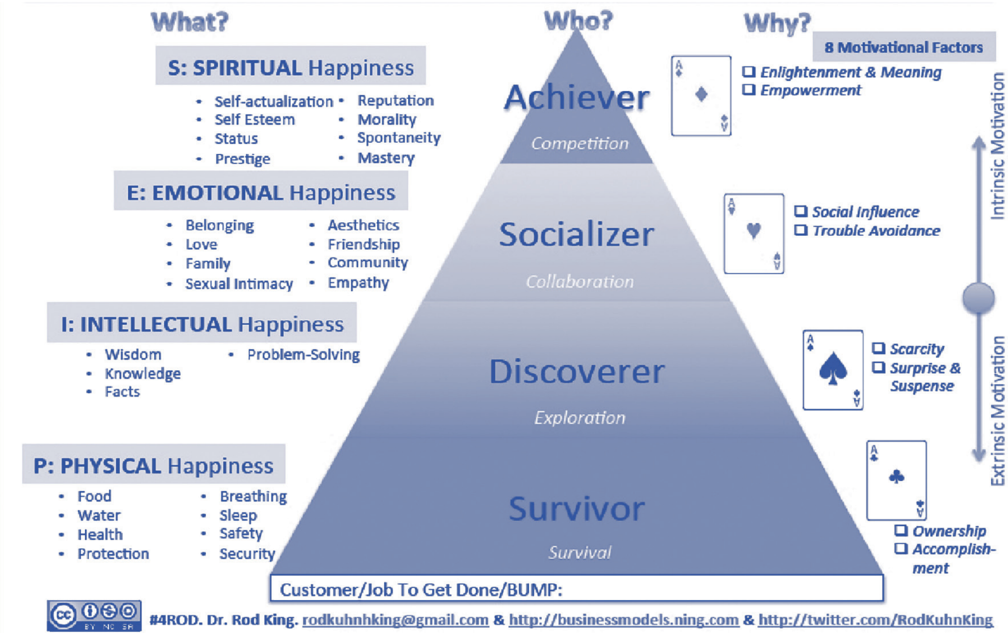
Figure 1. Customer Gamification Pyramid based on Maslow's Motivation Mechanisms (King, 2013)



The best games and gamified systems should satisfy the needs of all four categories. Even the Survivor may be your friends if they function as elite "power users" or if they galvanize everyone else in a positive way(Werbach Kevin & Hunter Dan, 2012).

Gamification in knowledge *sharing*

The study of the related literature shows an abundance of applications of game and game-inspired designs in different contexts like education, health, and training. In other words, managers and the researchers' goals were to improve the human condition to encourage people to engage and participate in works easily (Nacke and Deterding, 2017; Norman, 2004). Foursquare and Stack overflow the contemporary examples of the use of technology and game in another context which is known as "gamification" (Deterding et al., 2011). Deterding et al. (2011) define gamification as "the use of game design elements in non-game contexts."

By using gamification, companies can capture people's attention, loyalty and innovation ideas, and in return, people receive recognition and reputation (Dale, 2014). Knowledge management has experienced two waves in which most of the projects failed (Lambe, 2008) During the third wave, an organization started to deploy game mechanics (such as rating, receiving a point, and leaderboard based on user activity) in KM programs (such as blogs, wikis, social media, and forums) known as gamification (Shpakova et al., 2016). Siemens as the best example of using game element (such as points) is based on the different culture of countries. Siemens system rewarded participants in KM systems for identifying experts (with more points, you are a knowledgeable person) or in other contexts, where people receive material goods (Shpakova et al., 2016). Stack Overflow portal or Yahoo Answers (Q&A applications) are additional examples of using game elements to motivate people to share their knowledge with others. Despite this successful application, how gamification can motivate people to share their knowledge is opaque. But, by reviewing the knowledge management literature, the main motivator of knowledge sharing, which can be more effective in search, share, and apply the knowledge is recognizable; this motivator includes recognition, reciprocity, and fun or enjoyment which is the key element of the gamified system and flow theory (Dale, 2014; Silic & Back, 2017). Financial rewards are pitted against fun, and in the gamified system, fun is given priority over financial rewards (Dale, 2014); the main problem with many existing KM systems is that they are "not fun" and user's engagement and satisfaction are low (Schacht & Maedche, 2015).

METHODOLOGY

Choosing the appropriate research method is the basis for conducting research and achieving relevant results. The thematic analysis method is used to analyze the semi-structured interview data. The exploratory interview was conducted with 15 TV employees to identify the motivational needs for knowledge sharing.

Sample and data

For conducting research, purposive sampling was used; the diversity of the TV sectors and professions of IRIB was taken into consideration. Due to the qualitative research approach and the need to identify the motivational needs of the staff, authors selected 15 employees from a variety of professions including, TV Channel managers, producers, directors, and writers.

To explore the employee's motivational needs and User-Type in the workplace, semi-structured interview was used as the primary data collection method in this research (Arksey & Knight, 1999; Wilson, 2014). Jennifer Mason argues that semi-structured interviewing is the interactional exchange of dialogue (between two or more participants, in face-to-face or other contexts) (Edwards & Holland, 2013). Regarding the aim of research which is analyzing and solving practical problems in IRIB, the authors used a case study that was suitable for "building and testing business theories" (Dul & Hak, 2007).

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Instrument

Data were collected from 15 semi-structured interviews with TV employees of IRIB. The interviews with these employees were conducted face-to-face and took between 30-90 minutes and covered the motivational needs of employees in knowledge sharing. "Do we ask our participants about why they are reluctant to share their knowledge? And what are their motivational needs to share knowledge with colleagues?" These interviews were recorded and then transcribed for analyzing. Interviews were conducted on 29th May – 21st June 2018 with employees of IRIB TV.

Date analysis

The thematic analysis method was used to analyze the collected data in semi-structured interviews with TV employees to identify motivational needs and User-Type. This analysis is done in two-step coding: generating concept and categories. These steps are done in MAXQDA 10.

RESULTS

Motivation

"What are the main motivational needs of TV employees of IRIB to engage in the knowledge sharing process as a collective entrepreneurship?" is our main question from TV employees of IRIB. Based on Table .1 the analysis of interviews in MAXQDA 10 indicates that motivational needs include both extrinsic and intrinsic motivation comprising factors such as status, power, autonomy, security, community, and learning. The most important motivation was identified by the number of sub-categories. The findings reveal that TV employees of IRIB are unwilling to share their knowledge, because they found that the organization does not take any steps to share knowledge amongst employees; due to this negligence, in most cases organization were criticized. Additionally, a dull environment is an impediment to the creativity and self-fulfillment of the employees, hindering them from creating a knowledge-based media product. On the other hand, there are also employees who, regardless of these issues, do not hesitate to transfer experience.

Table 1. Motivational needs of TV employees of IRIB to knowledge sharing (Authors' work)

Number of sub-categories	TV employees of IRIB motivations to knowledge sharing
38	Status
24	Power
15	Autonomy
14	Security
11	Community
8	Learning

Status: Recognition is a primary motive for sharing knowledge based on table .1; in other words, due to their efforts, employees expect to be appreciated by organizations. In knowledge sharing, people desire to acquire status because of their participation in knowledge transfer. Employees expect to be more admired as much as they collaborate and bring achievement to the organization; both inside and outside of the organization and among the audience. The interviewee said:

"The incentive that inspires employees to acquire more knowledge is achieving a desirable job position."

When employees do not reach their expected positions in the organization, they decide to leave the organization and choose a different environment. This is the fate of the organizations that do not pay enough attention to human resources. The interviewee said:

"We have a problem in an organization that someone gets an experience, fired from or leaves the organization for a professional environment."

Power: This motive, is one of the most important motivational needs among employees. This motive is more intense among employees. The reason for this lies in the notion that knowledge brings power; employees see their knowledge and skills as a powerful tool to meet their desires; in fact, the knowledge and skills are perceived as an asset, that empowers them.

"If knowledge has the benefit for employees, they will not share it."

"I have an idea, and if I share this idea with you, you will produce the program, I intended."

Of course, the motive of power among managers seems to be different; whereas employees are encouraged to share knowledge based on their power and status. In other words, employees who need more power are more stimulated to share knowledge.

"One of the motivating barriers among employees to share their knowledge is power relationships."

Autonomy: Autonomy in sharing knowledge should take place in the processes. In other words, in line with the main goal, the employees should be given the freedom to share their knowledge in the best way to deal with the issues.

"I would like to say that it was easier for him to act instead of talking. I mean, he was more comfortable in his way and carried out the transfer of knowledge. "

One of the issues that arise in the IRIB's organization, and maybe it can be generalized to all media organizations, is the importance of autonomy in media organizations. It's important to note that the loss of autonomy in the production of media products is an obstacle to the transfer and use of knowledge and additionally reduce liability.

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"So how can you transfer the experience of something which your employees are not happy with? They are not even willing to take responsibility. "

Community: based on interviews, the spirit of collaboration to share knowledge among employees, is critical. The motivation to communicate and create a network with employees in the organization encourages people to share knowledge.

"I think one of the main barriers to share knowledge in teamwork is the lack of spirit of cooperation. One who works in the field of teamwork should be involved."

Learning: Learning and discovering new things is often seen as a powerful incentive for employees, which leads to success in media activity. It can be found from most of the interviews that knowledge is both acquisitive and based on ingenuity and creativity.

"The good aspect of art is that it is endless, which makes people ecstatic. In media, this is reciprocal; sometimes the mentee learns from the mentor, and sometimes I am influenced by the mentee's work."

Security: One of the main barriers to knowledge sharing in IRIB is security motive. The dominant attitude among employees is that knowledge as a powerful element that guarantees their job position and even income. The interviewee said:

" The resource constraints make me avoid sharing knowledge. If someone else gains my knowledge, consequently, I will be deprived of resources."

"Nobody transfers their knowledge; if knowledge sharing is a threat to him."

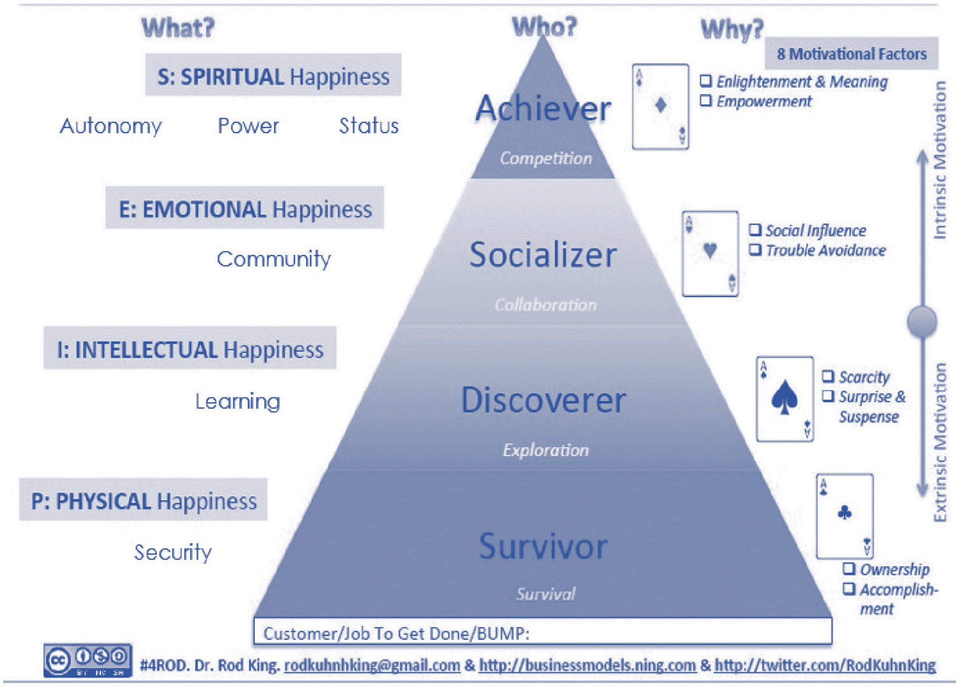
User type

"What are the user-types of TV employees of IRIB in the knowledge sharing process as a collective entrepreneurship?" To answer this question, we refer to the answer of the first question and employee interviews to identify user types. The analysis of the interviews showed that TV employees are categorized into four groups, including achiever, socializer, discoverer, and survivor.

Table 2. User type of TV employees of IRIB to knowledge sharing (Authors' work)

Number of sub-categories	User type of TV employees of IRIB in knowledge sharing
77	Achiever
14	Survivor
11	Socializer
8	Discoverer

Figure 2. User type of TV employees for knowledge sharing in IRIB (Authors' work)



Achiever: According to Fig. 2, employees have each of four user type, but one of them is strongest, which is an achiever. This type of user prefers to acquire autonomy, power, and status through sharing their own knowledge and experience; therefore, both financial and non-financial incentives are effective to this user type. In other words, the motivation of most employees involves achieving things satisfying their inner needs, such as status, power, and autonomy. These motivations, according to King's hierarchy, lead to spiritual happiness.

Socializer: This type of user (employee), shares knowledge for a sense of collaboration and belonging to IRIB organization. Help to colleagues in problem-solving and sharing knowledge through communication lead the employees to emotional happiness.

Discoverer: A sense of exploration, encourages employees to learn and gain knowledge. Based on Fig. 2, in the discoverer type, employees learn to be motivated to share their knowledge. How can they be successful in their professions? As mentioned above, media and art are endless, and this feature encourages employees to learn more.

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Survivor: At the bottom of the hierarchy, survivors are seen. They want security. Otherwise, they do not accept to transfer knowledge with colleagues. From the perspective of survivors, knowledge brings security.

DISCUSSION

This paper aims to answer the question of what the motivating factors and user-type of TV employees of IRIB are in the knowledge sharing process. The intent was to broaden our understanding of media employees and design the gamified knowledge sharing system properly. We identified six main motivators in the knowledge sharing context in the TV of Iran Broadcasting, including power, status, autonomy, community, learning, and security. Additionally, achieving these needs help us to identify the personality and user type. According to the theoretical literature, users are divided into four categories in the face of a game system: achiever, socializer, discoverer, and survivor.

Status: Media production is based on the participation and collaboration of media employees. The desire to join a community is a feature of the media business, which is more visible in activities such as filmmaking and television program production. The relevance of this subject to the status is that employees who have the knowledge about the field of media production, psychologically, are less commonly accepted as part of an organization, and this issue affects their social status in the organization. Because the status is associated with the recognition in the knowledge sharing process, this motive needs more investigation by the media management researchers (Wang et al., 2014). An employee earns status and recognition by sharing their knowledge and showing their expertise to others (Andriessen, 2006; Rahab & Wahyuni, 2013). An employee who has been motivated to share knowledge by status, considered as an achiever; based on the Four-Drives theory of motivation, these types of users want to forge a relationship with a co-worker and receive recognition and status (Perryer et al., 2016).

Power: In fact, the motive of power stems from the nature of media organizations; because media organization, in particular, public broadcasting organizations have a wide range of audience. Employees of these organizations are motivated to produce creative media products and attract the attention of the audience. Even content providers are sometimes more powerful than the head of the organization; the knowledge and skills of these people are considered as a powerful tool and an asset, which can turn into power, a power gained from the audience. So an employee showing their expertise to gain power (Andriessen, 2006) is considered as an example of the intrinsic reward in some research studies (Dale, 2014); According to the theory of Maslow, individuals need power (Andriessen, 2006); power in King's customer gamification pyramid is incorporated in achiever type. So, an employee who has the power motivation to share knowledge is considered as an achiever.

Autonomy: autonomy in IRIB reflects self-actualization in hierarchy needs of Maslow; As a consequence, autonomy is considered as an achiever. Hendriks (1999) introduces autonomy as the main motivational need for knowledge sharing. By enhancing autonomy, the employees will share their knowledge. Küng (2008) mentioned that autonomy-based processes develop creativity because the sense of ownership and, therefore, the internal motivation intensify and allow employees to deal with issues in a way that they can use most of their skills. The lack of autonomy in sharing knowledge prevents the flow of human resource knowledge into the system, thus affecting organizational efficiency and effectiveness and productivity of work.

Community: Relatedness to others may reflect belongingness in the hierarchy needs of Maslow. Achieving a creative and knowledge-based media product is not possible without collaboration. Media organizations need employees who are motivated to communicate and collaborate. Küng (2008) says attention needs to be given to the team's communication skills, otherwise, required expertise and insights will not be shared, particularly the tacit knowledge that emerges during the project. The sense of belonging and being a member of the family or community among TV employees points to bond drive (Perryer et al., 2016); Based on this drive, the employee is considered as a socializer. Socializers want to engage with friends and co-workers (Werbach Kevin & Hunter Dan, 2012) and "win together".

Learning: Modern media organizations and media professionals need to continuously learn because these organizations are constantly changing. Based on the four-drive theory, the opportunity to be challenged to learn new things and update their knowledge about new techniques are seen as strong incentives for employees. This leads to success in media work (Perryer et al., 2016; Wang et al., 2014) (Andriessen, 2006). Learning as an incentive satisfies the self-actualization need . But, in King's customer gamification pyramid, it is assumed as the motivations of discoverers.

Security: When the organizational psychological atmosphere transmits the feel of insecurity to the employees, they become conservative and focus solely on their own success and individual work. Andriessen (2006) points to security as a motivational need for knowledge sharing; Therefore, incentives such as job security, progress opportunity, high salary, receiving services and rewards have a positive impact. An employee who has been motivated by security is a survivor. In the organizational context, employee reaction includes emotions like fear, insecurity, and anger.

CONCLUSION

"What are the main motivational needs of TV employees of IRIB to engage in knowledge sharing process as a collective entrepreneurship?" Lack of motivation is the main barrier to share the knowledge among staff and foster entrepreneurship team. Considering this problem and according to the new motivational techniques, it

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is important to improve collective entrepreneurship. In this research, we focused on the motivation of media staff that was disregarded by most media management and entrepreneurship scholars. Our findings suggest that organizational entrepreneurship strategies should be designed based on identified different motivational triggers and user types that support creative and innovative behaviors. In IRIB, employees have different attitudes toward knowledge sharing and, not everyone shares their knowledge for their own reasons. Their motivational needs for knowledge sharing indicate that TV employees, mostly motivated by intrinsic motivations, including status, power, autonomy, community, learning. Status and power are the strongest motives that are largely ignored by the managers; and employees who fail to achieve these motives, leave the organization. Learning in the entrepreneurial environment is critical, but among TV employees it is not viewed as important, and IRIB managers should reinforce this type of motivation, on the other hand, security is the most basic and common motivation among employees. User type of employees includes achiever, socializer, discoverer, and survivor. Because of the dominance of achiever user type in IRIB, they should be awarded intrinsic motives in a gamified system.

In this paper, the authors focused on the areas that have been ignored by most of the media management scholars and also regarded gamification as a new trend for promoting entrepreneurship in media firms. In other words, this study focused on the fun layer, which is the main issue of existing knowledge sharing systems and identified the main motivational needs of media staff that create a sense of happiness and motivation to participate in organizational entrepreneurship.

Our study is limited to the Iranian context and public service media organization. The second limitation of our research is the scarcity of literature, studies and theoretical knowledge about media entrepreneurship and also knowledge sharing in media businesses. As suggested research for the future, the researchers can focus on the examination of motivational needs and user-types of employees engaged in knowledge sharing in non-public media firms. Also, gamification can be considered in future research as a solution (like using game mechanics, dynamics and aesthetics) to stimulate employees.

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AD-minister Nº. 39 july - december 2021 pp. 143 - 162 · ISSN 1692-0279 · eISSN 2256-4322

KNOWLEDGE MANAGEMENT IN THE AGE OF UNRELIABLE MESSAGES. DO UNIVERSITY STUDENTS TRUST ONLINE MESSAGES? (A SURVEY FROM THE MIDDLE EAST)

GESTIÓN DEL CONOCIMIENTO EN LA ERA DE LOS MENSAJES POCO CONFIABLES. ¿LOS ESTUDIANTES UNIVERSITARIOS CONFÍAN EN LOS MENSAJES EN LÍNEA? (UNA ENCUESTA DE ORIENTE MEDIO)

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RECEIVED: 09/03/2021

MODIFIED: 08/05/2021

ACCEPTED: 11/06/2021

DOI: https://doi.org/10.17230/Ad-minister.39.7

ABSTRACT

We are exposed to a constant stream of messages many of which originate from unreliable or untrustworthy sources. Moreover, it is not possible to control the messages before they are published and allow the dissemination of the verified ones only. Growing a critical mind can be a practical way to prevent the accumulation of incorrect or inaccurate information in our brains. The current study tried to see whether or not university students hold a critical view of social media messages. First, in a qualitative study, hundreds of messages shared on social media were observed, 12 of which were chosen based on the popularity of their central themes. Many of the messages contained an extraordinary claim such as the existence of mermaids, human-like complex emotions in animals, etc. Then, in a survey, the chosen messages were shown to 379 university students. The respondents were asked to express their opinions about the messages. For each of the 12 messages, between 36 to 94 percent of the respondents just assumed the messages to be true. The analysis of the responses revealed weak critical thinking among the students.

KEYWORDS

Social network, Message, Critical thinking, Media literacy, Trust, Flow of information

RESUMEN

Estamos expuestos a un flujo constante de mensajes, muchos de los cuales se originan en fuentes no confiables o fidedignas. Además, no es posible controlar los mensajes antes de su publicación y permitir la difusión únicamente de los verificados. Desarrollar una mente crítica puede ser una forma práctica de prevenir la acumulación de información incorrecta o inexacta en nuestro cerebro. Este estudio trató de ver si los estudiantes universitarios tienen una visión crítica de los mensajes de las redes sociales. Primero, en un estudio cualitativo, se observaron cientos de mensajes compartidos en las redes sociales, 12 de los cuales fueron elegidos en función de la popularidad de sus temas centrales. Muchos de los mensajes contenían una afirmación extraordinaria, como la existencia de sirenas, emociones complejas similares a las humanas en los animales, etc.

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Luego, en una encuesta, se mostraron los mensajes escogidos a 379 estudiantes universitarios. Se pidió a los encuestados que expresaran sus opiniones sobre los mensajes. Para cada uno de los 12 mensajes, entre el 36 y el 94 por ciento de los encuestados simplemente asumieron que los mensajes eran verdaderos. El análisis de las respuestas reveló un débil pensamiento crítico entre los estudiantes.

PALABRAS CLAVE
Red social, mensaje, pensamiento crítico, alfabetización mediática, confianza, flujo de información.

INTRODUCTION

"Heating water in a microwave oven can cause cancer; a minister has transferred millions of dollars of state budget into his account; a famous person can cure incurable diseases using his hands' energy; the government is planning to freeze 40 percent of everyone's money in the banks due to its huge deficit". If you are a user of digital social media, these are among the messages that you are likely to receive today.

We live in the information age, an era that was supposed to be an answer to our public ignorance. However, in a time when information is easily accessible for everyone, everywhere, we, as the public, do not seem to have gained a more factual knowledge about life and things around us. We have a significantly greater amount of data on our minds than any individual who used to live only decades ago but we receive most of the information through unreliable sources (Ghazali et al., 2017).

The problem of the reliability of the shared information is not limited to social media. Even the professional media (e.g. medical journals) and the scientific organizations have their issues (Larsson et al., 2003) but especially after the revolution of Web2 technologies (Shahghasemi & H. Prosser, 2019) and in a network in which young or old, educated or uneducated, and professional or unprofessional users can freely send and share messages, the problem is more apparent and potentially more critical.

The information age has its promises too. We are buried under a huge amount of information but we also have the power to carry out a relatively simple search to make sure about the factuality of a message that we have received. However, the sheer number of messages that we receive daily makes it impossible for people to research the factuality of all messages – even if they have the skills to do so. Therefore, the only plausible way seems to be: researching some and ignoring many. The question is if the public do so.

If we receive some food from an untrustworthy source, we would probably not eat it unless we make sure it is healthy. The same rule must go for a message coming from an unknown or unreliable source. In a network where every individual and entity is capable of easily fabricating or distorting messages and share fake news or false information (Crespo et al, 2020), the best strategy is arguably remaining skeptical and ignoring the received messages (as most likely incorrect) unless we can research the reliability and trustworthiness of the message or its source.

We do not have information on the percentage of the reliable/unreliable or true/false messages shared on social media. However, misinformation and disinformation

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are regularly shared on social media. Intentionally created fake news is just one instance. This is a challenge across different online platforms. The focus of the current research study is *social media* which is significantly used by "all demographics" (Shahghasemi & Emamzadeh, 2019).

A video shows a huge snake quickly swallowing a deer. The caption says: look how the snake's powerful jaws can swallow a deer in less than a minute. For those who are more familiar with snakes, the video looks somewhat suspicious because the entire incident happens while people are standing around the snake and one of them is tapping on its body. However, one may call it too skeptical to doubt the authenticity of this message. First, because it is a video and the audience can see what is happening with their own eyes. Second, why would someone fake such a video? There does not seem to be a clear political or economic motive to fabricate such a video.

The reality is that snakes do not swallow huge prey while surrounded by a dozen men; especially when someone is tapping on their back. On the contrary, if they sense a threat, they would throw up a previously swallowed pray, to be able to escape. If you play the video backward, that is exactly what happened. For some reason, someone reversed the video and wrote a misleading caption on it. It seems that we cannot be skeptical or suspicious enough of the messages received through social media and the internet.

Research Question. The current study aims to answer the following question: Do people (in this case, a group of university students) easily believe the messages they receive on social media or are they inclined to cast some doubt, especially when faced with messages that contain an extraordinary claim?

As argued, such skepticism seems to be one of the main ways to keep people from accumulating false information in their brains. Moreover a brief look at the literature indicates that the current body of research has not much addressed the issue and therefore it is important to design research studies to measure people's trust/skepticism when faced with online messages.

LITERATURE ON TRUST AND MEDIA LITERACY

The current study is concerned with trust and skepticism. Keywords related to "trust" do not lead to many studies with a similar concern. Some studies deal with trusting a *node* or some nodes of the network, say a company or its products (Martínez & Rodríguez del Bosque, 2013; Hoq et al., 2010; Luarn & Lin, 2003). Others speak of trusting the network as a medium. For example, a study titled *Trusting the Social Media in Small Business* (Kahar et al., 2012) seeks to answer if small business entrepreneurs trust social media to promote their work.

Some studies have investigated trust from a psychological angle (Rotter, 1980). Some others have studied *trust* as an organizational and managerial factor (Jarvenpaa et al., 1998). Others tried to find patterns to explain why and when different media are more trusted by people (Sabbar & Hyun, 2015). However, a search using the keyword trust does not usually lead to the studies concerned with people's unjustified and probably unhealthy trust in online messages.

Studies with a similar concern about people's easy trust, usually fall under the concept of media *literacy*. It is hard to present a literature review on media literacy because it covers a diverse range of issues from specific aspects of using media-related technologies to broad discussions on the role of media in the society (Kumar, 1987). Different topics from people's critical thinking and skepticism to people's skills in using different features of their smart phones can be all considered sub-topics of media literacy.

In many relatively newer studies the technical and logical aspects of media literacy have been both addressed (see: Lee, 2016). Luke argues that teaching the cultural aspects of media literacy, and information and technology studies cannot be taught independently of each other anymore (Luke, 2007).

The multi-faceted nature of the literacies needed at the age of digital information has led to the development of numerous concepts such as media literacy, information literacy, data literacy, news literacy, critical literacy (Weng, 2021), digital literacy, etc. Each of these concepts can cover very different aspects of our social lives including identity (Robinson, 2019), professional development (Rogers et al., 2021), etc.

Media literacy can be seen as a window to teaching a broad range of cultural and intercultural issues (Bruinenberg et al., 2021). An example is teaching critical media literacy in order to familiarize adults with diversity (Tisdell, 2008). Many of these studies see media literacy as a way to "empower citizens for a mediatized world" (Mateus, 2021).

A major subfield of media literacy that is also closest to the current study's question, addresses the issue of correctness and accuracy of online or social media messages. Many of these studies address people's ability to distinguish true information from misinformation, disinformation, and fake news (see: Hornik & Kajimoto, 2015; Lee, 2016). Some researchers have looked into the pedagogical and school-based approach to teaching media literacy (see: Scheibe, 2004; Westbrook, 2011; Hobbs, 2004).

Here, a major concern is that if the critical thinking of people (and especially children) improves, they would be less likely to fall for fake news, misinformation, or different kinds of fraud. For instance, it has been argued that such critical thinking skills could reduce the negative impacts of TV on children (Singer & Singer, 1998). Also, improved critical thinking may help people identify fake news (Jones-Jang et al., 2019).

Rather than focusing on the audience of social media messages, some studies have directed their attention on the systems and methods that may help more accurate messages flow through digital information networks (see: Riser et al., 2020). Verification labs and verification experts that would monitor the popular online messages and conduct fact-checking for the public are among the foci of these studies (see: Kruger, 2017).

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The current study has a different focus, as it aims to investigate whether or not people actually easily trust online messages. To the best of our knowledge little scholarly attention has been dedicated to answering this question. The "growing concern over fake news" (Haggar, 2020) has led to the publication of more research studies in the field of media literacy, many of which looking at media literacy as a way of empowering the society against fake news (Horn & Veermans, 2019).

When the concern is people's critical thinking, sometimes the issue of trustworthiness of the messages is addressed. However, even in such cases, skepticism is not the main concern and different aspects of people's understanding of the age of internet and social media are discussed (see: Polizzi, 2021). More study needs to be done on people's trust/skepticism toward messages, in their actual day-to-day life.

Rather than addressing the techniques that may enable people to distinguish information from misinformation, this study is focused on the detriments of blind trust in social media messages. As argued, this is specifically important because most people cannot get the required knowledge to distinguish information from misinformation in all fields and they can never dedicate enough time to researching and analyzing every piece of information they come across online.

The significance of this research lies in the fact that it intends to measure to what extent the students taking part in this study are skeptical about the messages they receive through social media. Also, it uses a method to ensure that the respondents are not aware that their skepticism level is being tested.

METHODOLOGY

The study is comprised of two qualitative and quantitative parts. First, in a qualitative work, several hundred messages shared on Telegram, the most popular social network in Iran, were reviewed. Through a qualitative approach, the researchers tried to find the most popular themes among the messages and picked 12 messages that included those themes. Two researchers worked on the messages shared on popular Telegram groups.

Since the research is concerned with the concept of trust, the study held an intentional bias toward messages and themes that were harder to believe. For instance, two of the chosen messages say or imply aliens have visited the earth in the past and mermaids exist. Except for one of the 12 messages, the others were factually untrue. The messages were not created. They were simply found and picked. However some of the messages were made shorter, simpler and more easily understandable.

The qualitative part of the study did not include a quantitative-type sampling and it was not aimed at making generalizable claims. Therefore, the extracted themes are not necessarily the most popular themes and the study could not make any quantity-based generalization. The messages and their central themes were investigated and the ones with more interesting themes for Iranian audiences were chosen. The messages were chosen based on the following criteria.

1. **True/False applicability:** This study aims to investigate if people doubt the truth of messages they receive on social media. However, regarding a large percentage of the messages that flow on social networks, asking a true/false question would be meaningless. Many messages depict an interesting picture, a beautiful dance, or a funny hidden-camera prank. Others tell a joke or share a song. We chose among materials that one could ask about their factuality.
2. **Non-obviousness:** many of the messages to which the true or false question applies, seem to be obvious. Highly skeptical minds may consider most messages non-obvious. For instance, if a message presents a beautiful scene with a caption saying "this is a beautiful scene from our country", a highly suspicious mind may doubt if the location is where the caption says.

This study did not want to set the bar too high in terms of critical thinking, therefore for instance a message was chosen that said: a female dog hugged her puppies and cried after she managed to find a shelter for them. This is not a true message. Even though dogs are emotional animals, tears coming from their eyes cannot be a result of emotions. However, one does not need to know this fact to doubt that dogs have such a sophisticated level of emotions that they can solve a problem and then hug their children and drop happy tears.

The final 12 messages are as follows. As the study was done on Iranian social networks and the respondents were Iranians, clearly the original messages were in Farsi. They were translated into English for the sake of presenting them in this paper. Each text was accompanied by a related picture.

1. A female dog hugged her puppies and cried after she managed to find a shelter for them.
2. There have been similarities between an ancient statue and modern astronaut hats, which confirms the theory that aliens have visited the earth in previous centuries.
3. Historical monuments show that the necktie originated from what was used in ancient Iran.
4. The largest turkey sandwich was eaten by a mob in Mellat Park [in Tehran] before the Guinness representative could register it.
5. [Iranian] Dr. Arkani is a Harvard University Professor. He was given Albert Einstein's seat at Princeton University that was left vacant since Einstein's death.
6. While many believe that The Kaaba [the most sacred Islamic site in Mecca] is exactly the center of the earth's surface, scientists have shown that the center of the earth's surface is on a location between Germany and Switzerland.
7. Cyrus the Great [the ancient Persian King] said: I don't have time to hate those who hate me. I'm busy loving those who love me.

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8. Remains of a mermaid were found on the shores of England.
9. A Danish television anchor died while reading a news story that insulted Prophet Mohammad.
10. A Japanese tourist saw trash around the Palace of Ardashir and started cleaning up.
11. A European tourist, who came to visit Persepolis barefooted, cried happy tears.
12. The latest studies show that our emotions have measurable frequencies. Scientists believe that the discovery is a beginning to finding the human mind's supernatural abilities.

To the best of our knowledge, all but one message (number 4) were factually untrue or at least included inaccurate information.

The qualitative part of the study was used to prepare the questions. Afterward, we surveyed a representative number of the students of Allameh Tabataba'i University. The university has over 10 thousand students. The minimum number of randomly chosen students that can be considered a representative sample is calculated using the following formula in which **N** is the population size, e is the margin of error, **z** is confidence level and **p** is the percentage value.

$$[Z^2 \times p(1-p) / (e^2)] / [1 + (Z^2 \times p(1-p))/(e^2 \times N)]$$

The result is 371. The questionnaires were given to 379 randomly chosen undergraduate and graduate students of Allameh Tabataba'i University in the city of Tehran. The questionnaire included demographic questions as well as questions on the participants' activity on social networks. The questionnaire also included 12 messages similar to those that people receive through social media. The respondents were asked to express their opinions about the messages hoping that they would provide clear information for the researchers to realize whether or not they believed the messages to be true.

CODING

Once the respondents had filled the questionnaires we needed to analyze their comments to find out if they had doubted or trusted each of the twelve questions. If all those who filled the questionnaire had commented on all the 12 messages this would involve a careful analysis of some 4800 comments. However, since many of the respondents ignored some of the messages, the number was well below that. However, it is always difficult to reach a coding process that reliably analyzes comments and read the minds of the writers.

Three coders cooperated in the coding process. They read the comments and wrote preliminary operational definitions, defining when the commenter believed the message and when she or he doubted it, or did not believe it. Whenever reaching a decision was hard, the respondent's comment was marked *unclear*. The researchers coded a number of the responses, compared the results, discussed the disagreements, and refined the definitions over and over. The three coders did so until they reached a level of confidence beyond acceptable for a research study.

In most research projects where more than one researcher does the coding, each coder is assigned to work on a part of the data. This makes inter-rater agreement critical because different parts of the data are evaluated differently. Here, the three coders (two assistants and a leading researcher) first worked on the same 80 messages and compared their results, argued the disagreements, and refined the definitions. Even after that, the messages were not divided among the coders. The two assistant researchers did the coding of the entire messages.

At this point, Cohen's Kappa was calculated which confirmed that the coding process was reliable.

$$k=(Pr(a)-Pr(e))/(1-Pr(e))k=(Pr(a)-Pr(e))/(1-Pr(e))$$

The calculated Kappa was 0.93 which means excellent inter-rater agreement.

However, then the three researchers argued the disagreements and decided on the final choices for each message. Therefore, the final agreement rate was 100 percent but being aware of the importance of having clear operational definitions, acceptable by common sense, we calculated Kappa before this final state to make sure about the reliability of the coding.

DATA ANALYSIS

The following table presents the frequencies and percentages of the respondents and their demographic information. The table shows different groups of respondents based on their age, gender, education, marital status, and the part of their expenses that they earn on their own, as opposed to the money they receive from their parents.

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Table 1 – Frequencies of respondents based on age, income, and education

Age Group			Expenses Covered by working			Education		
18-25	Frequency	298	Less than half	Frequency	274	Bachelor's	Frequency	217
	Percentage	79.9		Percentage	77.4		Percentage	58.2
26-33	Frequency	67	Half	Frequency	34	Master's	Frequency	134
	Percentage	18		Percentage	9.1		Percentage	35.9
34-41	Frequency	8	More than half	Frequency	46	PhD	Frequency	22
	Percentage	2.1		Percentage	12.3		Percentage	5.9
Total	**373**		**Total**	**354**		**Total**	**373**	

Table 2 – Frequencies of respondents based on gender and marital status

Gender			Marital Status		
Female	Frequency	320	Single	Frequency	352
	Percentage	85.8		Percentage	94.4
Male	Frequency	53	Married	Frequency	20
	Percentage	14.2		Percentage	5.4
Total	**373**		**Total**	**373**	

Nearly 80 percent of the respondents were 25 years old or younger and most of them covered less than half of their expenses. Nearly 86 percent of the respondents were female and most of them were single. We also dedicated several questions to investigate the respondents' media consumption. The following table shows how much time was spent on computers, the Internet, social networks, and television.

Table 3 – Frequencies of respondents based on media consumption

Daily Use of Computers (hours)			Daily Use of the Internet (hours)			Daily Use of Social Networks (hours)			Daily Time Spent on TV (hours)		
1 or less	Frequency	166	1 or less	Frequency	34	1 or less	Frequency	69	1 or less	Frequency	281
	Percentage	44.7		Percentage	9.2		Percentage	20.9		Percentage	76.4
2 - 4	Frequency	143	2 - 4	Frequency	183	2 - 4	Frequency	205	2 - 4	Frequency	81
	Percentage	38.5		Percentage	49.3		Percentage	62.1		Percentage	22
Over 4	Frequency	62	Over 4	Frequency	154	Over 4	Frequency	56	Over 4	Frequency	6
	Percentage	16.8		Percentage	41.5		Percentage	17		Percentage	1.6
Total	371		Total	371		Total	330		Total	365	

As the table indicates, over 41 percent of the respondents spend over 4 hours on the internet, while only 1.6 percent of them spend over 4 hours watching television. Over three fourth of the respondents spend one hour or less on TV. On the other hand, nearly half of the respondents said that they used computers for one hour or less per day. The data implies that the internet is the predominant media and people mainly connect via their cellphones.

We also compared different social networks based on their popularity for the respondents. Telegram was by far the most popular social media used by our respondents. Over 81 percent of the respondents use Telegram at least every two days.

Table 4 – Frequencies of respondents based on the social network use

		Instagram	Line	WhatsApp	Telegram	Facebook	Twitter
Use at least every two days (n = 337)	Frequency	106	15	65	274	26	19
	Percentage	31.4	4.5	17.4	81.3	7	5.1

The following table contains the data showing how many of the students believed or doubted the messages. We extracted separate numbers for each of the 12 statements.

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Table 5 – How many students believed each of the 12 messages?

	Message	Believed	Didn't believe	Total
1	A female dog hugged her puppies and cried …	201 **93.1%**	15 6.9%	216 100%
2	… aliens have visited the earth in previous centuries.	118 **59.9%**	79 40.1%	197 100%
3	… the necktie originated from what was used in ancient Iran.	125 **70.2%**	53 29.8%	178 100%
4	The largest turkey sandwich was eaten by a mob …	187 **96.9%**	6 3.1%	193 100%
5	[Iranian] Dr. … was given Albert Einstein's seat at Princeton University …	170 **91.4%**	16 8.6%	186 100%
6	… the center of the earth's surface is on a location between Germany and Switzerland.	66 **42.6%**	89 57.4%	155 100%
7	Cyrus the Great … said: I don't have time to hate …	146 **71.9%**	57 28.1%	203 100%
8	Remains of a mermaid were found …	75 **47.5%**	83 52.5%	158 100%
9	A Danish television anchor died … [after she] insulted Prophet Mohammad.	72 **36.7%**	124 63.3%	196 100%
10	A Japanese tourist saw trash around the Palace of Ardashir and started cleaning up.	209 **96.8%**	7 3.2%	216 100%
11	A European tourist, who came to visit Persepolis barefooted, cried happy tears.	162 **93.1%**	12 6.9%	174 100%
12	The latest studies show that our emotions have measurable frequencies …	136 **85%**	24 15%	160 100%

Out of twelve messages, five messages were trusted by over 90 percent of the respondents. As for three other messages, 70 to 85 percent of the students just assumed them to be true. Between 36 to 60 percent of the respondents assumed the four remaining messages to be true.

We also looked for significant relations between the respondents' trust in the messages and their demographic information and media consumption. Since there wasn't a scientifically acceptable way to classify the messages, we checked the relations for the 12 messages individually. The trust variable gets two values (0, 1) indicating whether the respondents believed the message or not. The relationship between trust and other variables was investigated. Since trust is a categorical variable, chi square was used to check the existence of any significant relationships.

We did not find any significant relationships between the level of trust and the respondents' marital status. There were three significant relations between the respondents' gender and the level of trust in three of the messages. One of the relations was between trusting the first message (female dog) and the respondents' gender. Compared to male participants, a higher number of female respondents believed the message. In the case of two other messages (2^{nd} and 3^{rd}), also female students were more trusting. We didn't see significant relationships between the level of trust in the other nine messages and the respondents' gender.

Whether or not the respondents themselves cover their expenses using the money they earn, only showed correlation with the third message. The students who cover about half of their expenses were more suspicious of the message compared to those who earned much less or much more. This could have resulted from a third variable. In any case, it is not easy to explain this result.

Interestingly and understandably the level of education showed significant relation with trusting the highest number of messages: the 2^{nd} message (about aliens visiting the earth), the 3^{rd} message (about the use of neckties in ancient Iran), the 7^{th} message (a quote from the Iranian ancient king), the 8^{th} message (the discovery of the remains of a mermaid), and the 11^{th} message (about a tourist crying while visiting a historical site).

Regarding the 2^{nd} message, 65.3 percent of the bachelor's students, 55.9 percent of the master's students, and 12.5 percent of the Ph.D. students believed that it was true without doubting it. Similarly, the level of trust showed a direct reverse relation with trusting the 8^{th} message as well. 55.1 percent of the bachelor's students, 37.7 percent of the master's students, and only 14.3 percent of the Ph.D. students believed it to be true.

As for the other three messages that had significant relations with the level of education, the Ph.D. students were the most suspicious ones. However, the master's students didn't seem to be more suspicious than the bachelor's students.

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Table 6 – Ph.D. students were the most suspicious of the messages

	Trusting BA students	Trusting MA students	Trusting Ph.D. students
3rd message	72.9%	73%	12.5%
7th message	73.2%	77.9%	25%
11th message	94.1%	95%	75%

Regarding all the five statements the Ph.D. students proved to be considerably more skeptical of the messages than the BA and MA students. Age had a significant relationship only with the level of trust in the 10th message. 97.7 percent of the people between 18 and 25 believed the message to be true. 94.4 percent of the respondents between 26 and 33 believed the message but 75 percent of those between the ages of 34 and 41 did so. However, one can argue that this might be the result of a different variable such as education if age and education are in direct relationship.

Regarding the respondents' media consumption and the use of different social media, we found several significant correlations. However, each variable showed only correlations with some of the 12 messages. Watching TV showed significant correlations with the 1st and the 7th messages.

Table 7 - Significant correlations between trusting messages and time spent on watching TV

Daily time of watching TV	1 hour or less	2-4 hours	Over 4 hours
Believed the 1st message	93.5%	94.3%	60%
Believed the 7th message	66.7%	83%	100%

Using social networks had a significant correlation with the 11th message. Using the internet had no connection with trusting the messages. Using computers had significant correlation with the 5th and the 7th messages.

Table 8 - Significant correlation between trusting messages and time spent on social networks and computers

Daily time of using social networks	1 hour or less	2-4 hours	Over 4 hours
Believed the 11st message	80%	95.6%	96.8%
Daily time of using computers	**1 hour or less**	**2-4 hours**	**Over 4 hours**
Believed the 5th message	94%	85.9%	100%
Believed the 7th message	77.4%	73.1%	53.1%

We failed to see an obvious pattern showing how people's media consumption can be used to explain the level of trust and suspicion regarding messages that they receive from social networks.

RESULTS

The 4th and 10th messages "mob eating a sandwich" and "a Japanese tourist..." gained the highest levels of trust by the respondents. Nearly 97 percent of the respondents simply assumed that the incidents reported in the messages did happen. Only 3 percent of the respondents showed a kind of doubt for instance by asking for a source or questioning the factuality of the message[1].

Also, two other messages were assumed to be true by more than 90 percent of the respondents: the 5th message "giving Albert Einstein's seat at Princeton University to an Iranian Academic." and the 11th message that says a "European tourist came to visit an Iranian ancient monument barefooted and cried".

The results show that the level of education can be the best factor to predict one's trust or doubt regarding the messages. This can be evidence for the promising idea that by educating people, they can get more critical of the messages they receive through social media. Many of the characteristics that we checked in this study failed to show significant correlation with the level of trust or being critical of the messages.

The fact that the students are easy believers of media messages and age or other factors (except for education) cannot predict their trust level strengthens the idea that no factor might be as powerful as education in this regard. We cannot hope to encourage the whole society to get Ph.D.s but probably direct and indirect efforts to increase people's media literacy can make great improvements.

1 It is arguable that whether or not the messages are true is irrelevant here. What we expect the respondents to do is showing a kind of doubt. However, if the message is true there is a chance that the respondent saw the message before and made sure that it was true and that is the reason that he or she didn't show any doubt. For this reason the messages were mainly chosen from those that are not true and with very inaccurate content.

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CONCLUSION

Skepticism is (or should be) deemed as a precious asset these days. Of course, having an ability to realize what messages are more questionable and the skill to hypothesize about the objectives of those who create or share social media messages, would be highly valuable. However, developing those skills among different groups of people in the society is not easy and no short-term plan would make them possible. Promoting skepticism in the society about media messages, on the other hand, can be carried out more speedily and people with different education backgrounds and social levels can learn how to be more skeptical about the messages they receive.

Schools, universities, media and NGOs concerned with public knowledge and ignorance, should put their efforts into increasing people's critical thinking and media literacy. In an increasingly commercialized world in which financial interests are becoming the first priority even for the universities (Friedrichsen et al., 2017) this can be a greater challenge. As a short-term plan, however, arguably increased skepticism can prevent a part of the harm that can be resulted from the flow of unreliable information. As suggested before, when it comes to messages received via social media, researching some and ignoring many can be a safe strategy.

Promoting this kind of skepticism - if enough effort is dedicated - should not be a huge challenge. People can be provided with samples of messages including wrong or inaccurate information about social, economic, health-related, and other issues. Showing how audio, photo and even video messages can be misleading and fake can be helpful. Also revealing the truth about popular wrong messages which many people believe to be true can have a great effect on increasing skepticism among people and encouraging them to ignore or research more before trusting messages on social media.

The current study found evidence that people, even educated ones, lack high levels of critical thinking and they easily believe messages they receive on social media. Arguably in a time when everyone, thanks to the development of the social media, can be a powerful source of information, we are better off ignoring some true and informing messages in return for not littering our brains get packed with hundreds of unreliable pieces of information. Of course, as a second and more advanced plan, the society should be also guided through good ways of researching and evaluating the information it faces on a daily basis.

Five out of the 12 messages shared on the study's questionnaire gained the trust of more than 90 percent of the respondents. We think it is safe to claim that this is evidence enough for the naivety of people as far as the social media messages are concerned; especially bearing in mind that the respondents are university students.

Three other messages were trusted by over 70 percent of the respondents. Even if a message sounded highly suspicious to our respondents, in no case less than 36 percent of them assumed it to be true.

Even the messages that were not assumed to be true by high numbers of respondents could be considered as evidence for people's uncritical minds. Nearly 60 percent of the respondents believed the message about the aliens and only about 47 percent of them believed the one about the remains of a mermaid. However, considering the oddity of the claims presented by these messages (e.g. aliens have traveled to the earth in the past centuries and a beautiful woman with a fish tail exists) those percentages seem considerably high.

One who is familiar with Iranian culture can argue that some of the messages are closely related to popular myths that many Iranians hold: Iranians are very smart and they have very high IQs and the world is impressed by Iran's history and its historical monuments. Interestingly at the same time, many Iranians are critical of their people's *underdeveloped culture* when it comes to rushing to eat a sandwich or littering historical sites while they think "foreigners" don't do that and they might even come to Iran and start cleaning up litter from a historical site.

These findings support the hypothesis that if a message supports a previously held opinion or interest it will be subject to less critical thinking and doubt. In other words, if a message implies something that you think is true or you like to be true you are more likely to accept it without questioning its factuality.

As an example, if you believe that Iranians are exceptionally smart when you read a message saying an Iranian Professor was given Albert Einstein's seat after it was empty for half a century you are less likely to doubt it and ask: how come that seat was empty for five decades? Einstein was a university professor; why would the university leave his position empty for such a long time? Were none of the annual Nobel Prize Winners in physics qualified to teach physics at that university?

Future research can use creative ways to extract popular themes that undermine people's critical thinking and skepticism. Moreover, the effects of such themes on the reactions of the audiences can be examined.

A NOTE ON GENERALIZABILITY

We chose 12 messages among thousands of messages with hundreds of different themes. We do not have statistically valid information to claim that the 12 messages are representative of all messages that flow through social networks. If we replace the messages with others, the results could change.

Also, we deliberately chose messages that we considered *hard to believe*. We considered the hardest message to believe to be the one about the discovery of the remains of a mermaid. If we had chosen messages that were easier to believe, the results could be even more disappointing.

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LIMITATIONS OF THE STUDY

Even though 379 people filled the questionnaire - which makes generalization possible - the valid data for each of the 12 messages is well below that number. The reason is that the respondents were not directly asked whether or not they believed the messages. Instead, they were asked to write a comment on each message using which the researchers tried to understand if they had believed the messages. This meant hundreds of hours of extra research work and more complications, but it seemed to be necessary.

The comments provided by some of the respondents clearly showed that they did not doubt any of the 12 messages. But if each message came with a sentence asking *do you think this message is true* the respondents would have known that at least some of the messages where false and they would tend to cast some doubt. That is not what happens while people naturally surf the internet. The study tried to recreate that natural environment.

As a result the coders did not have the respondents' self-report and had to make a judgment on whether a respondent believed a message. In such a case an obvious rule would be that the coders should not be allowed to read too much into the respondents' comments and other than "believed" and "not believed" there should be an option *unclear* for the likely case where the respondent's trust or doubt is inconclusive. As a result, the number of valid responses for each message varies from 155 to 216, which significantly reduces the valid sample size.

Another issue is the fact that this study was largely based on descriptive rather than inferential statistics. As explained, despite the large literature on media literacy and related concepts such as fake news, there is not much information on the amount of false information that is being shared on the internet or how different groups of people react to them. As we have not developed scientific measuring references any judgment on whether or not someone is uncritical to critical enough toward online messages remains descriptive, and somewhat subjective. This study should be considered a preliminary work before more systematic research is done in the future.

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HOW TO COMPOSE A MEDIA MIX TO WIN AN ELECTORAL CAMPAIGN? PROPOSING A FRAMEWORK FOR POLITICAL MARKETING

¿CÓMO COMPONER UNA MEZCLA DE MERCADEO DE MEDIOS DE COMUNICACIÓN PARA GANAR UNA CAMPAÑA ELECTORAL? PROPUESTA DE UN MARCO PARA EL *MARKETING* POLÍTICO

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JEL: I21, I23, M1

RECEIVED: 28/03/2021

MODIFIED: 16/05/2021

ACCEPTED: 23/06/2021

DOI: https://doi.org/10.17230/Ad-minister.39.8

ABSTRACT

This article addresses the issue of composing different media to send an integrated message to the voters in electoral campaigns and presents a framework for managing media in political marketing. The authors conducted deep interviews with strategy developers of the past presidential elections as well as two parliamentary elections in Iran to extract the strategy development process for delivering the campaign message to the target audiences. thematic analysis used for analysis of data and interviews coded in three levels of open, axial and selective. The paper suggests a sequence of audience, message and media to launch a successful campaign within a framework that starts with campaign structure and strategy and accomplished with economic effectiveness measuring and success rate.

KEYWORDS

Election, Electoral campaigns, Political marketing, Media management, Political communication.

RESUMEN

Este artículo presenta un marco para la gestión de medios en campañas electorales. Se realizaron entrevistas a profundidad con desarrolladores de estrategias en las pasadas elecciones presidenciales, así como dos elecciones parlamentarias para extraer el proceso de desarrollo de la estrategia para transmitir el mensaje de la campaña a las audiencias objetivo. El documento sugiere una secuencia de audiencia, mensaje y medios de comunicación para lanzar una campaña exitosa.

PALABRAS CLAVE

Elecciones, campañas electorales, *marketing* político, gestión de medios, comunicación política.

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INTRODUCTION

Democracies in modern era are mainly based on elections, and politicians at different levels need to convince their target audiences to vote for them to reach the seats. Almost in every election in every part of the world, electoral campaign is the central place that the candidate, its party and the supporters share and coordinate their efforts. Considering the money and number of people involved in every election, campaigns are one of the most important marketing gatherings that in a specific and almost short period of time, communicate immensely with the big portions of public to convince a large number of people with their messages. Huge investments of parties and supporters make elections the arena for a huge marketing campaign and therefore, understanding how to be successful is a much-demanded knowledge that candidates and parties seek to find through the political marketing experts, campaign strategists, media managers, etc.

As an example, the controversial 2020 US election has been recognized as the costliest election in the history of the country, setting a new record for spending for political propaganda and large portion of this money was spent on social media. The total cost of this election is estimated at about $14 billion. It has been said that Biden campaign spent $1 billion and $63 million on the campaign from April 1, 2019 to November 23, 2020, to defeat his inner-party rivals, such as Bernie Sanders and then-rival Donald Trump. Biden was able to win with about 81.271.000 votes. With that in mind, the campaign for the next president has cost more than $13 per vote (www.baratnews.com). In another example, The UK's snap 2017 General Election cost a total of $262 million according to Politico, which is just $2 million less than the 2016 referendum cost. In fact, during referendums in the UK, there are fairly stringent spending rules, which put $13 million limits on both the Vote Leave and Britain Stronger parties. The country's 2015 election that saw David Cameron win the majority for Conservatives was a little less costly. The total paid from the UK Government's Consolidated Fund for the costs of the 2015 UK Parliamentary general election was $214 million. German political candidates are only allowed one TV ad, which means for the major parties, the CDU (Christian Democratic Union) and the SPD (Social Democratic Party), that's eight times on each channel over the course of the campaign. Angela Merkel secured a fourth term as a German chancellor in the country's September 2017 election, despite being the CDU's worst electoral performance since 1949. The election cost a total of $148 million, which is miniscule in comparison to the US (Yahoo finance). Many scholars agree that campaigns and political communications influence individual voting behavior and election results (Ansolabehere & Iyengar, 1995; Bartels, 1996; Popkin & Kinsey, 1991; Zaller, 1992, 1996). Therefore, the study of the communication regime of election campaigns has been a serious issue in many studies (Semetko & Tworzecki, 2017).

Due to the importance of electoral campaign from financial, political and social aspects as well as its effect on the future of countries and societies, exploring the elements of a successful electoral campaign is very essential, and setting media

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strategy to effectively convey the message to the audiences is the key point. This research addresses the media strategy in the electoral campaigns and to do this, Iranian presidential elections in the last twenty years as well as two last parliamentary elections were studied. In Iran, members of the parliament, as well as the president, are elected by direct popular vote. During the particular days, the candidates and their supporters are authorized to launch campaigns and spend huge amounts of money to attract the voters. Significant financial, human, physical, and energy costs have been spent on these campaigns over the years, both in terms of the economic prosperity they create for some jobs and the enthusiasm they create among the candidates' supporters (Best et al., 2008; Marcus & MacKuen, 1993).

At the same time, choosing the effective media mix under the communication regime of election campaigns is one of the serious challenges for the campaigners, so that, the diversity in the media coverage for elections around the world has become both a challenge and an opportunity (Elchahabi & Gallagher, 2015). Before the advent of social media, the mainstream of the electoral media was the formal media (Owen, 2018), but with the spread of mobile phones and the emergence of new media and communication methods (Delli Carpini & Williams, 2020), a wide variety of media was created that has shaped the individual media (Crosbie, 2018). Appropriate media has increased the way it conveys the message to the audience properly. Accordingly, election campaigns have to use a media mix in order to reach the diverse audience. This phenomenon is called multi-platform (Doyle, 2013) and it is so important that advertisers redesign their messages to fit the appropriate media mix for their audience.

The importance of choosing an effective media mix and using a multi-platform approach in these campaigns is so great and the success or defeat of the election depends on it. The campaigns of Barack Obama in 2008 and Donald Trump in 2016 were the examples of choosing the effective media mix that led to their success. Since previous studies have shown that a significant part of the election campaign in Iran is carried out regardless of the appropriate media mix and only with the previous experiences of the campaign agents, the efficiency of such efforts and the effectiveness of expenditures and resources are undermined as a result. Considering the above mentioned, this research seeks to identify a framework for appropriate media mix for electoral campaigns and to answer the question of 'How to effectively compose media mix to transfer the message of electoral campaigns?'

LITERATURE REVIEW

1) Political marketing

The combination of two fields of marketing and politics for increasing the capacity of political groups and their success in electoral competitions is the purpose of the political marketing theory. Political marketing as a discipline has gradually found its framework (Ediraras et al., 2013; Friedrichsen et al., 2017) and is a tool that facilitates the efforts of political parties to establish long-term relationships with voters and stakeholders (Henneberg & O'shaughnessy, 2007). Political marketing implies the use of concepts, principles and methods of marketing in political issues by individuals, groups, organizations and nations. Political marketing includes the analysis, planning, evaluation, and control of political activities by individuals, groups, political parties, government, and lobbyists (O'Shaughnessy, 2009). Zareie et al., (2016) compared political marketing to commercial marketing, arguing that in commercial marketing, sellers offer goods, services and information to the market and receive money, information and customer loyalty in return, but in electoral campaigns, candidates present their political commitments and preferences in exchange for the votes, efforts, and support of voters.

Neffenger in his political marketing process model, emphasizes that political marketing involves the attempt to integrate internally the four traditional marketing factors of product, promotion, price, and place that are effective in controlling voter behavior. In the same regard, Warren (2011) identifies political campaigns as commercial ones, arguing that politics, like any other industry, has a product, a marketing strategy, and a buying opportunity that includes a politician, a campaign, and a vote and needs management and planning to achieve the desired goals. Political campaign is designed for campaign days to reach out to the to the audience, in other words, it means saying the best words at the best possible time. Choosing the right slogan to address the concerns of the general electorate, choosing the right symbol, using social reference groups correctly, choosing the right advertising content that includes both negative in the face of competition and positive content, accurate and timely use of various advertising tools, such as from face to face speeches, debates, virtual networks, etc., accurate segmentation and prioritization of the market over the capabilities of insiders and competitors, the right choice of the main audience of the party, maximum use of loyal supporters for networking and developing the voting community and even in some cases negative struggle and creating a bipolar atmosphere to increase the number of fans are the points that will increase the effectiveness of advertising in the voting market (Hajipour et al., 2016).

One of the notable models in the field of the effect of advertising on the political behavior of voters was proposed by Wring (1997), who developed the political marketing process by election campaigns around the marketing mix. Product is the image of the party or the image of the party leader or ideology; Promotion includes media advertising and public relations activities and field and postal advertising; Place is the arena for field activities, rallies and election tours; And Price includes the different costs of energy, psychological, economic, and time that voters consider. This process includes supporters, fluid voters, and competitors. In another model, (Newman & Sheth, 1985) consider emotional feeling, the image of the candidate, current events, personal events, social image, and political events as elements that influence the voter's decision.

Cwalina et al. (2015) stressed the importance of scientific research in political marketing. Kotler & Keller (2012) presented a six-step process of political campaign marketing activities for creation of a candidate's marketing plan including

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environmental research, external and internal evaluation analysis, strategic marketing, goal setting and strategy making, communication planning, organizing distribution, and paying attention to the key markets. Based on a model presented by Falkowski and Cwalina (2012) aimed at influencing voters' behavior, effective cognitive elements of individuals cause an emotional feeling and as a result, they decide to vote, and election campaigns are a mediating variable in the decision to vote. In this model, the advertisement must be carried out to boost the image of the candidate and in the form of a party. Lilekis (2006) lists four characteristics for successful political propaganda: 1) they are based on the resources available to the candidate; 2) they present the topics in the form of appropriate narratives; 3) they are audience-oriented; 4) they present a simple and understandable message.

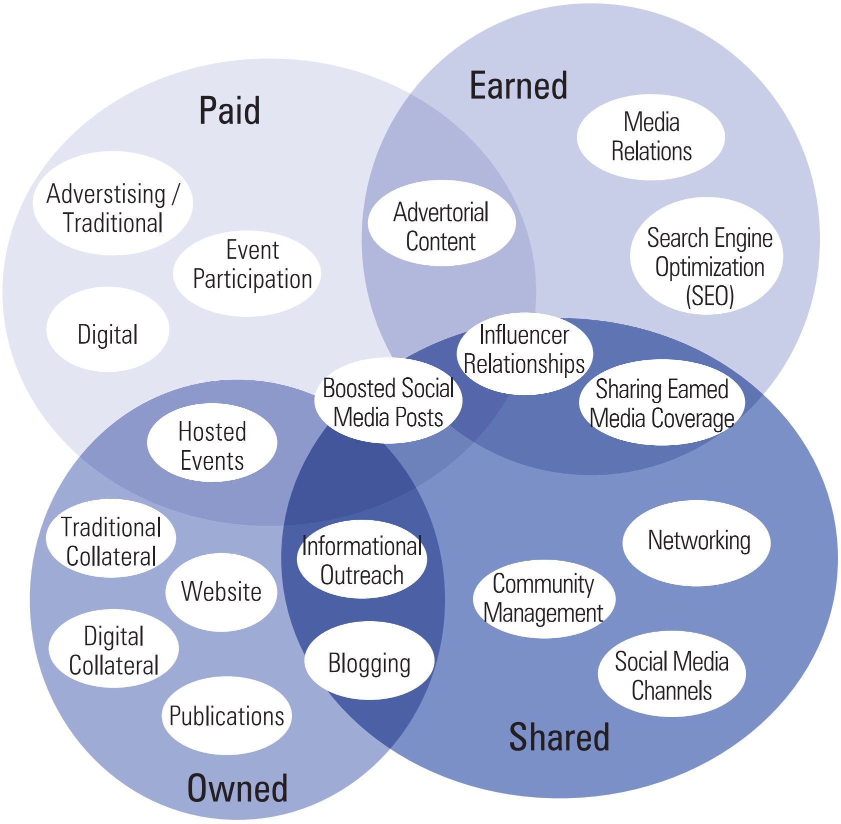
Newman's model of political marketing is one of the most comprehensive models ever presented in this field which describes the concept of marketing in political behavior. This model offers several methods for marketing actions in the political field. In his mode, Newman identifies four political marketing mixes with political campaigns, including candidate, push marketing, pull marketing, and polling. In Newman's model, push marketing refers to the actions of low-level campaign members that are necessary to form a network of volunteers to perform a variety of activities. Pull marketing is the attempt to use mass media such as television, radio, newspapers, post, Internet, etc., which in this respect is similar to the promotion element in the business marketing mix. Polling means doing research and then analyzing the data to examine the serious ideas and determine how successful they are. Such a model is used by many candidates in Western countries.

2) Media mix

Digital revolution created a wide variety of media to reach the audience. While mass media and print media were the only types of media before the advent of the digital technology, the emergence of web and social media gave rise to a new type of media never experienced before. Given the prevalence of mobile phones worldwide, social media became ubiquitous and available on always-on mobile devices in every moment of time (Hossain, 2019) This new revolution, second screen media, made users available for marketing purposes; therefore, it is not surprising that electoral campaigns use this type of media for their goals too. Appearance of new type of media did not extinct previous media, but co-existed and sometime accelerated them. For example (Khajeheian, 2011; Su & Zarea, 2020) coined the word 'media remediation' for the evolution of old media toward a new media by the use of new technology to survive. For example, radio remediated toward podcasts to use internet for reaching the listeners.

Faced with such variety of media, choosing the right type is a challenge for marketers as well as campaign managers. To organize different types of media for research and practical uses, Capizzo and Regina (2019) proposed a typology of media types known as PESO model, including Paid media, Earned media, Shared media, and Owned media. This model focuses on the strategic planning process for campaign development. Figure 1 depicts this model by representing media located in each category and the ones which are common in two or more categories.

Figure 1: PESO Model(Capizzo & Regina, 2019, p. 62)



Many research addressed the proper mix of media. For instance, Aminian et al (2013) studied the proper mix of different media to increase awareness of lung cancer patients and to promote the health. Khajeheian et al. (2012) presented a matrix of media management to manage the proper media mix.

Luttrell and Capizzo (2019) also presented a different definition of strategy and tactic in managing the media mix. According to their model, strategy is about complimentary channel selection and how to support objectives through complementary channels to convey messages to different audiences (p.58). On the other hand, tactics focus on the effective transmission of messages to "create a memorable campaign-wide and audience-specific message" (p.58) and should reflect audiences, timeline, budget, messaging and team expertise (p.59). A wide range of strategies and tactics are applicable by the use of PESO. It also shows the

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ways in which these approaches can be combined to support the achievement of organizational and communication goals and objectives. For this reason, the present study uses this model to combine a proper mix of media to convey the campaigns' messages to the target audiences.

METHODOLOGY

Luttrel and Capizzo (2019) proposed the ROSTIR model (Research/Diagnosis, Objectives, Strategies, Tactics, Implementation, and Reporting/Evaluation) for the public relations planning process. This model goes beyond the traditional models of public relations including R.A.C.E. (Research, Action, Communication, and Evaluation) and R.O.P.E. (Research, Objectives, Communication, Evaluation). It examines the two components of ROSTIR and PESO in order to examine in more depth the process of planning an integrated campaign to develop a strategy to achieve customer goals.

This research is an exploratory one that has sought to provide a framework of composing different media for electoral campaigns for presidential candidates to maximize the impact of the campaign's message on the target audience and voters. Term framework implies on identifying the boundaries, the constructing factors and the basics elements of a phenomenon (Khajeheian, 2019, p. 20). To this end, a qualitative approach was followed.

This study used content analysis as the method. The interviews were transcribed and then by the coding system, they were analyzed as open coding, axial coding and selective coding. MaxQDA2010 software was used for the analysis. In the first step, via open coding the key phrases of the interviews were extracted and then labeled by codes. In the next stage axial coding categorized the open coding labels into meaningful groups. Finally, selective coding created the map of meaning and built a ground to interpret the findings.

To collect the data, bibliometric analysis, interviews and content analysis were used as methods for conducting this research. In the first stage, previous materials related to the subject of electoral campaigns were collected and reviewed. These documents included official statements of parties and candidates made in the previous electoral campaigns, governmental instructions and policies for advertising in the periods of elections, etc. as well as the contents of advertisements, including social media campaigns and other available materials. In the next stage, in-depth interviews were conducted with a sample of practitioners who ran the previous campaigns to understand how the campaigns' strategies were set and conducted and what special concerns had already been experienced.

Semi-structured interviews were used as the main tool for data collection. In spite of Covid-19 outbreak, many of the interviewees requested for in-person meeting, amid concerns over possible leak of their political views in digital communications; for this reason, all interviews were conducted during in-person meetings. Each interview started with an open question on the process of setting campaign's strategy based on the experience of interviewee and how audience, message and media were chosen. Open questions allowed the respondents to freely explain their experience and describe the subjects that may not be covered in pre-set questions. After answering the open questions, the interviewer asked the questions that were left unanswered. The data collection included Iranian presidential elections from 1997 to 2021 when this study was underway. It covered all activities within the electoral campaigns. The interviews took between 40 minutes to three hours and were conducted in person, in spite of Covid-19 outbreak to prevent or decrease the level of conservatism in responses amid respondents concerns over possible date leak in digital communication.

Population of this research comprised practitioners, strategists, campaign leaders, head of electoral campaign' headquarters and all those who participated in setting electoral campaign strategy in presidential campaigns in 1997, 2001, 2005, 2009, 2013, 2017 as well as parliamentary elections of 2015 and 2019. Due to the impossibility of collecting data from such a large population, sampling was inevitable. A purposive and available sampling method was used to select the sample that best conveyed the rich information and specialization. Table 1 presents the sample of this research with their code and the background. The sampling continued until it met saturation. At this point, new interviews provided no more new code. After the 12th interview the saturation was met and no new code was generated from the last 2 interviews.

Table-1 Research Sample

Code	Background	Political orientation
I 1	Senior advisor and campaign theorist of one of the presidential candidates in different elections (since 1984, personal branding and political campaign)	Autocratic
I 2	The head of the people's campaigns in the different election periods, and the head of the youth headquarters and campaign organizations.	Autocratic
I 3	One of the organizers of the election campaign of the reformist representatives and the deputy head of the youth headquarters	Reformist
I 4	Consultant and organizer of reformist candidates' election campaigns in different periods and planner of candidates'campaigns	Reformist
I 5	Adviser and campaign planner of reformist candidates in different periods	Reformist
I 6	Chief of Staff of one of the presidential candidates, in charge of the advertising and communication committee of election campaigns in different periods	Moderate autocratic
I 7	Member of various election campaigns in different election periods	Moderate autocratic
I 8	Member of the Reformists' Campaign Planning Council during the Election Period, and Chief of Staff of the Youth and Students of Tehran	Reformist

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Code	Background	Political orientation
I 9	Planner and executive of reformist election campaigns in different election periods	Moderate autocratic
I 10	Reformist campaign planner	Moderate autocratic
I 11	Activist of reformist candidates' campaigns in different periods, member of the Central Headquarters of the Presidential Election in 2013 and head of the youth of the Presidential Headquarters, secretary and executive deputy of a member of parliament in 2015, member of the content production committee in the 2017 presidential campaign	Reformist
I 12	One of the first circle of reformist headquarters and one of the advisory councils of the 2013 election	Reformist

Data analysis method: Thematic analysis was used for analyzing the collected data. Every interview was first transcribed and then analyzed by coding the content of interview immediately after the interview was conducted. In this approach, the output of each interview was used as the input of the next interview to create more in-depth and enriched questions. Table 2 and 3 lists samples of open and axial codes.

Table-2 Sample of Open codes

Basic Themes	Propositions
Instagram	Instagram was also somewhat active, I remember that one of Mr. Rouhani's campaigns, I think, it was in Shiroudi Stadium, and was streamed on Instagram live, and in fact, they had a page for themselves that was being broadcast.
	Cyberspace was so strong, Telegram was so powerful, and Instagram was so powerful that people could find lists from there.
	Social networks like Instagram played a very important role because, about 80% of the internet data in Iran were said to had been used for watching videos, it means that, 80% of people know that this video is being seen in Iran.
Professors and Academics	My audience is a specific audience, which can consist of elites, academics, celebrities and actors.
	Now, it is true that there were different strata, including the industry, doctors, university professors, and sometimes members of the parliament.

Table-3 Sample of axial codes

Main themes	Organizing themes
Social Media	Facebook
	Telegram
	Instagram
	Twitter
	WhatsApp
	Internal messengers
	Viber
Scholars and special audiences	Elites and intellectuals
	Professors and academics
	Actors and Celebrities
	Ex-representatives of Parliament

FINDINGS

Analysis of 12 deep interviews extracted 7 main themes, 24 organizing themes and 68 basic themes. Seven main themes included: 1) Campaign's Structure, 2) Advertising Performance Evaluation, 3) Advertising Tools, 4) Advertising Strategies, 5) Audience Analysis, 6) Message Design Method, and 7) Message Design Features.

Figure 2: Main themes

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4.3.1. Campaign's Structure

Generally, the election campaign structure consists of four categories: staff agents, decision making methods, staff hierarchy, and committees' structure. These factors along with their relevant codes and elements were inserted in the below table.

Table-4 Campaign's Structure

Political Marketing & Advertising Experts	Campaign Agents	Campaign's Structure
Amateurs and non-professionals		
Consultative	Decision Making Method	
Individual		
Policy Council	Campaign Hierarchy	
Committees		
Provinces and Cities		
Cyber Space	Committees' Structure	
Acknowledgment		
Content Production		
Field Advertising		
Regions		

4.3.1.1. Campaign Agents

The interviewees highlighted the role of the campaigns' agents, which included propaganda and political marketing experts and also, amateurs and non-professionals.

- **I 9:** Certainly, the person who wants to work in the campaign, for example, for a prominent presidential candidate, definitely has the experience of election work and electoral campaign discussions. Either he/she knows the tools, or he/she has different relationships that help him/her in the way. So we cannot say that person surely must have studied advertising, political marketing, etc., but he/she certainly needs a realization from certain tools and relationships.
- **I 9:** When a team launches an advertising campaign, within that team, different groups of people are involved; from educated people to experienced ones and also people who have the tools and relationships.
- **I 1:** The specific knowledge of this kind of campaign in the world is political marketing, campaign management, and political brand discussion that these fields are not taught in Iran. So there is no specialist in these subjects here. Therefore, people who work on this matter are those who have learned it empirically.

4.3.1.2. Decision Making Method

Another theme that is considered in the current research as a significant factor in the structure of the election campaign is the decision making method. Decisions in the campaigns are made both collectively and individually.

- **I 11:** I remember in year 2015, 5-6 people gathered and talked about the style of advertising we wanted to use. Finally, we decided to use banners. Because we said that the people of Tehran do not know Mr. Jalali.
- **I 11:** Generally, in different campaigns, decision making and taking the choice is by the council or the individual.

4.3.1.3. Campaign Hierarchy

Importance of the staff hierarchy is another topic that the interviewees discussed. As mentioned earlier, decisions and policies are made in the campaigns' policy council and announced by the chief of the campaign.

- **I 11:** The structure of the advertising team is mainly outlined in the headquarter bureau of the election campaign. An advertising deputy is a person who is determined by the candidate or the policy-making council, for managing and directing related affairs.

4.3.1.4. Committees' Structure

The structure of the committees is another theme that the interviewees paid attention to. In order to determine and divide the activities and affairs, the election campaigns defined different committees to carry out the tasks more efficiently.

- **I 11:** There are a number of committees and working groups, such as content production, websites, cyberspace, field advertising, groups, and so on.
- **I 11:** In the advertising department, different positions like the head of content-production, head of publication, head of media, and head of field advertising could exist.

4.3.2. Advertising Performance Evaluation

Evaluating the performance of propaganda in campaigns indicates their effectiveness and efficiency that led to the victory in the election. In addition, it can help examine and identify the strengths and weaknesses, as well as opportunities and threats, and the feasibility of capacities, activities and actions. Evaluating and measuring advertising performance can provide a roadmap to the campaigns, as well as policymakers and agents, to diagnose the failures so that they can make better decisions in similar situations in the future.

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Table-5 Advertising Performance Evaluation

Review Sessions	Internal Advertising Performance Evaluation	Advertising Performance Evaluation
Simultaneous Evaluation		
Result-based Evaluation		
Receiving Feedback from Security Entities & Polling Agency	External Advertising Performance Evaluation	

4.3.2.1. Internal Advertising Performance Evaluation

One of the themes of evaluation of campaign performance is the internal theme that deals with the evaluation made within the election campaign of each candidate.

- **I 11:** We have monitored our campaign activities & evaluated ourselves in the previous year of elections according to our field observations and face-to-face meetings. For example, we saw two banners in a place that were not before, so we evaluated our activities well and effectively. Moreover, we monitored our cyberspace activities on social media according to their likes, comments, and viewers.
- **I 9:** In the year 2017, Mr. Rouhani's central campaign had a monitoring committee which evaluated all plans & programs carried out across the country. But in fact, now we do not have any output. Because after the election everything was forgotten and never maintained and used these findings for future campaigns.
- **I 4:** In the year 2005, Mr. Moein personally decided to hold a series of meetings for analyzing the campaign's activities and the result of the election. However, it was not systematic. In all these years, I do not remember anything was written or collected.
- **I 6:** Usually, the result of the election is the most important issue. If we won, everyone would be happy, and if we lost, everyone would be upset. No one evaluates the factors that caused these results scientifically at all.
- **I 3:** This rarely happens. Usually, the day after the election all the campaign agents go home and no specific assessment takes place.
- **I 8:** If we were the winner of the election, we did not need any evaluation, and if we lost, there was not any tendency to it.

4.3.2.2. External Advertising Performance Evaluation

According to the statements of experts of this research, a part of the evaluation of the propaganda performance or generally, the evaluation of the performance of the candidate's campaign is done through other organizations and polling centers or think tanks in general, the process of participation in elections and examine the activities of the campaigns depends on the candidates. Finally, feedback is communicated to the candidate's headquarters or to the public.

- I 3: Based on traffic, GPS, and traffic cameras, they estimated the population was 31,000 people at that event.
- I 8: Following the elections, some governmental organizations and the polling agencies like, the Iranian Students Polling Agency (ISPA), are reviewing the election results.

4.3.3. Advertising Tools

Numerous tools are used in campaigns to pave the way for a candidate to win in election campaign. Advertising tools which used in campaigns are divided into 4 categories; Audiovisual, field, network-oriented, and print.

Table-6 Advertising Tools

Radio	Audiovisual Advertising Tools	Advertising Tools
Official & National & Internet TV		
News Agencies & Websites		
Posters	Field Advertising Tools	
Tracts		
Banners		
Electoral Applications	Network-based Advertising Tools	
SMS		
Emails		
Social Networks		
Bulletins	Print Advertising Tools	
Serials		
Newspapers		

4.3.3.1. Audiovisual Advertising Tools

Based on the experts' perspective who participated in this study, media such as radio and television (nationally, online and even abroad), news agencies, news websites, and blogs are among the audio-visual tools.

- I 5: In the year 2009, for the first time we used internet television.
- I 4: For the first time, in the year 2005, candidate election films and interviews with them were used.

4.3.3.2. Field Advertising Tools

Campaigns use tracts, posters, banners, catalogs, and other similar items in field campaigns.

- I 11: At that time, our advertising tools and media were like posters and field advertising.

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- **I 11:** In the last days of authorized advertising, we published a brochure to present the titles of our candidate's speech.
- **I 11:** field advertising usually be attractive for most of the people
- **I 12:** The field advertising was entirely done in the headquarter bureau of the campaign. This action was completely purposeful and planned. For example, squares of cities were divided into different parts and different bureaus would be present at the squares.

4.3.3.3. Network-based Advertising Tools

With the development of the Internet infrastructure and the adoption of cyberspace by society in the country, changes and its impact in different periods and types of elections are witnessed. These include social media, election apps, texting, email etc.

- **I 12:** Cyberspace acted so powerfully, Telegram and Instagram were so powerful that people could find lists of candidates from there.
- **I 3:** Nowadays Twitter has become one of the most important and influential media on social networks, where many of the country's decisions are shaped by the pressures that Twitter accounts now bring.
- **I 11:** The use of telegram networks was important. They had a team called the Cyberspace Campaign, one of its members was responsible for discussing & negotiating with admins of telegram super-groups & channels with more than one million viewers, such as "Khabar fori", "Eghtesd online" and etc.

4.3.3.4. Print Advertising Tools

The print media has always been influential in elections, opening up different sections of a closed society to their different political views.

- **I 12:** Until 2005, presence and use of newspaper & magazine were seen.
- **I 12:** So far, newspapers have kept working, but their presence is gradually weakening. For example, a chain newspaper at the time could sell more than one million copies a day.
- **I 7:** In the past, most of the advertising in election campaign activities was presented in newspapers, and their specials. Campaigns used the newspapers that had comprehensiveness in the country.

4.3.4. Advertising Strategies

Advertising strategies include the methods and strategies used in the campaign to introduce the candidate and gain maximum votes for him. Based on the received themes from the interviewees of this study, the strategies are divided into two categories: traditional and modern.

Table-7 Advertising Strategies

Speeches	Traditional	Advertising Strategies
Conferences & Meetings		
Provincial Travels		
Election Debates		
Election Films & Clips		
Celebrities	Modern	
Animation making		
Advertising in Cyberspace		
Thought leaders		
Using the Colors		
Matching the message to the audience		

4.3.4.1. Traditional media

Common methods and strategies that have only been used in the previous years and periods of elections and are still underway, include speeches, conferences, provincial trips, debates, and campaign videos and clips. A remarkable point is the increase in debates and promotional videos and clips after a period of elections.

- **I 11**: It is partly related to authorized and introduced media such as the state TV IRIB. A specific amount of air time was allotted to the candidates to introduce themselves through various programs such as debates, promotional clips, and questions and answers.
- **I 10:** If we look at the election debates on IRIB, the former candidates during the presidential elections passed through non-serious challenges on each other. None of the candidates directly criticized or insulted each other, but after all, in the 2017 presidential election, the candidates were almost challenging each other.
- **I 8:** Mr. Khatami changed the game during his provincial trips in 1997. Basically, every campaign activity until that moment had an equal effect with Mr. Khatami's provincial trips.
- **I 8:** For instance, numerous conferences, publicity rallies. Those traditional provincial trips turned into various propaganda rallies throughout the city.
- **I 11:** We went to Yazd for 2013 election trips with Mr. Rouhani. We told Mr. Rouhani that when you go to the Hazira Mosque in Yazd city, you should mention Mr. Khatami's father, the martyr Sheikh Sadoughi, and Mr. Khatami himself. This was a little difficult for him, because the atmosphere was not so open in 2013; but we needed their votes, he named them and the crowd at the mosque encouraged Mr. Rouhani several times, and this was one of the positive feedbacks.

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- **I 10:** There was an office for conferences and speeches in all the headquarters, a list of 50-60 speakers existed in that office. When provinces and cities wanted to hold conferences and such events, we were using that list.

4.3.4.2. Modern media

Over time, with the use and modeling of new methods of propaganda and political marketing, election campaigns developed new strategies. Under such circumstances, the importance and effectiveness of colors and elements, taking advantage of the presence and role of thought leaders, celebrities and influential figures, animations and noisy advertisements in cyberspace are increasing on a daily basis prompting election campaigners to pay attention and adapt the message to the audience. Therefore, through accurate audience analysis, the appropriate message is prepared, set and sent.

- **I 11:** In advertising committee, social media is used to display comic animations like as "Dirin Dirin", to frame a number of rival candidates and mock their words…
- **I 11:** There were lots of parliament members like Mr. K. Jalali, Mr. B. Nemati, Mr. Pars, and Ms. F. Salahshouri who became Mr. Rouhani's ambassadors in their own cities and as Mr. Rouhani` s campaign selected for doing propaganda.
- **I 11:** As an impressive example is the late Mr. D. Rashidi as a celebrity with a smile, at the crossroad with a box of sweeties, and a poster of Mr. Khatami. It was extremely effective for all classes and audiences' society.
- **I 11:** The influence of certain religious figures such as Mr. Nategh Nouri, Mr. Khatami, Mr. Seyyed H. Khomeini, and Mr. Hashemi Rafsanjani was used whose every message could activate a voting base and may increase empathy to winning the competition.
- **I 5:** Finally, Mr. Khatami's second phase statement was a kind of confirmation for the "second phase" idea. So this issue was presented in a way in the speeches, and repetition of that greatly helped the campaign.
- **I 5:** Whenever people were asking, who will they vote for? They told someone that Khatami suggested! They did not know that who is the candidate and which party he belonged to, but because of the good image of Khatami's management, this choice was a memory of that times for them.

4-3-5- Audience Analysis

Paying attention to the audience and audience analysis leads to sending the right message, in the right period of time for the right audience and encourages a large number of audiences. Therefore, taking the needs, values, goals, background and limitations of the audiences into account can help the campaign to target the intended issues and determine the appropriate strategy.

By examining the answers of the participants in this research, 6 themes were extracted for the audience community: ethnic and religious audience, audience of guilds and groups, political audience, special audience, young audience, and urban class audience. Each of these audiences includes other concepts.

Table-8 Audience Analysis

According to the Religious Tendencies	Ethnic & Religious Audience	Audience Analysis
According to the Ethnic Tendencies		
Teachers	Audience of Guilds & groups	
Workers		
Physicians		
Industries Owners		
Silent voters & Electoral swing/ swing voter	Political Audience	
Critics of the status quo		
Celebrities	Specific Audience	
Former Members of Parliament		
University & Professors Academics		
The first voters	Young Audience	
University Students		
High Urban	Urban class Audience	
Low Urban		
Middle Class		

4.3.5.1. Ethnic & Religious Audience

Experts participating in this study considered the different election campaigns audiences due to ethnic and religious differences. Regarding the religious minorities, local influential people or figures are used in the campaigns to gain public support. In addition, trusted individuals and figures from different ethnic groups traveled to their cities and villages as candidate ambassadors.

- **I 11:** Sometimes when the candidate was on a provincial trip the chief of staff or related positions would take part in conferences. Under these circumstances, the chiefs of that department carried out their duty, like Mr. Younesi who was from Sunni minority group and went and spoke perfectly in the Sunni majority areas in 2013.
- **I 7:** If the candidates were from the Sunni community, they would focus on attracting the Sunni votes.
- **I 11:** In the last 10 days or a week to the election, the ones who were trustees of the people of their own village and town selected as Mr. Rouhani's ambassadors.

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Instead of Mr. Rouhani and the members of his campaign, they were making face-to-face connections with the people and did the propaganda. The communications were in their own dialects and languages; The Azeri speakers would speak Azeri, the Lors would speak Lori dialects...

- **I 11:** Provincial and city propaganda suits the indigenous atmosphere of that province or city, the tribal ethnic and the elders' debates. In Khuzestan province, tribes are very influential, so they were identified. Even now for next year's elections (2021), we can see that, for example, Mr. Dehghan as a probable candidate is preparing himself to go and talk to the tribes and hold meetings.
- **I 5:** The goal of our campaign was to express unity. So that we were all trying to pay attention to all ethnicities; in all the videos and photos we tried to show the ethnicities together, even if you see that video of Azadi Stadium, the video clip played during Mr. Rouhani's campaign featured dialects of different ethnic groups.
- **I 5:** Emphasis on national solidarity regardless of ethnic and ideological differences.
- **I 7:** Some candidates have ethnic votes, like the current city council members who have an ethnic vote, who are either Lor-speaking, Azeri speaking...They would analyze this issue and eventually take those votes. We have to accept that, especially in our country, where ethnicities are numerous and influential or even family ties are influential in this regard.

4.3.5.2. Audience of Guilds & Unions

Some of the target audiences include Guilds and unions, which are defined in the main conceptual categories related to the titles of teachers, workers, doctors, industry activists, etc.

- **I 11:** In May, two dates (Global Labor Day and National Teacher's Day) are in the calendar of country, and subsequently two events could be held. One of the candidates had reserved the Hijab Hall for the teachers' union, and the necessity of cooperation with the Labor Party was discussed.
- **I 4:** There are various committees in the headquarters; the labors committee, the teachers' committee, and so on. The decision to make content for the workers and the teachers is made in their related committee.
- **I 7:** In proportion to the union and the society, there were different working groups. For example, in many situations, there was a working group of doctors or teachers.
- **I 7:** In the working group of the unions and guilds, sometimes a group of doctors came and talked about their potentials. In such situations, holding a meeting was necessary.
- **I 6:** Presence in neighborhoods, meetings with specialized groups such as; the owners of specialized jobs, doctors, professors of universities, teachers, etc. had been used. This means that meeting both the specialized groups and the people in neighborhoods are always part of the election campaigns.

4.3.5.3. Political Audience

The political audiences of the election campaigns are the gray and silent voters and who do not want to vote or are undecided, as well as the critics of the government, who are reluctant to participate in political events. So election campaigns should attract them and prepare the conditions that can encourage them to vote.

- **I 11:** Our target audience was the people who boycotted the ballot box because of the events of 2009. These people were considered as the special groups of the society.
- **I 11:** If the silent voter comes to the polls, we will win.
- **I 12:** The reformists were people who did not favor the government and criticized it, and sought more social freedom. The most important effort of this group was to persuade them into the ballot box.
- **I 6:** Since the 2017 election, a problem occurred in the middle-class group of voters, there was evidence that they were completely against the policies of the government, and they were not interested in the campaigns. They could no longer be associated with politics.

4.3.5.4. Specific Audience

Specific audience is another topic raised by the participants in the current study. It includes professors and academics, ex members of the parliament, as well as the community of artists and athletes.

- **I 11:** In Mr. Khatami's era, the use of actors and celebrities, who went to the crossroads and handed out flowers and sweet among people, became common. Now in the following years, using the actors and celebrities in campaigns is still underway. At that time, color symbols were part of the campaign slogan that were not as strong as the speaker, but were effective.
- **I 11:** Now the audience of the community includes different characters like the elites, university professors, celebrities, and actors. However, the main audience in 2005 mostly included the actors, and were focused on famous people, to convey the candidate's goals to society. In fact, the objective was to use the influence of celebrities.
- **I 5:** There should be three or four political celebrities or artists in each square with a group of young people. However, they said the idea came from the West!
- **I 3:** It was decided to invite artists, athletes, and political celebrities to campaign gatherings in which music was played. Playing music is very important in campaigns as it triggers enthusiasm.
- **I 11:** Now the target audience is the specific part of society, elite, university professors, celebrities, and actors.
- **I 11:** Diverse strata were classified into different groups. They had been divided into the industry men, doctors, university professors, and even former MPs.
- **I 11:** There were lots of MPs like Mr. K. Jalali, Mr. B. Nemati, Mr. Pars, and

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Ms. F. Salahshouri who became Mr. Rouhani's ambassadors to launch election campaigns in their own cities

4.3.5.5. Young Audience

Candidates' election campaigns target young people because of their great physical and mental strength. In addition, the influence of this segment of the society always an effective role in making the electoral atmosphere enthusiastic.

- **I 11:** In the 2009 election, young people played a very important role, they were known as the third generation. In fact, in the election of 2009, the main program of the central bureau of campaign for Mr. Mousavi was focused on the youth and even the first time voters.
- **I 5:** For example, in second term of election in 2001, Mr. Khatami's approach was focusing on young people, because of that; the campaign should have paid more attention to the youth.
- **I 4:** Younger groups in society have more tendency toward the reformists, because of that they comprise the largest segment of our target audience.
- **I 10:** Naturally, young people are our target audience because they are ahead of their time, and want to achieve more prosperity. The mindset of the youth is different from older people now, because of the generation gap.

4.3.5.6. Urban class Audience

Social and economic class to which the target audience belong is deemed as an import factor in organizing the campaigns, based on which the message and content of the campaigns are tailored and prepared.

- **I 7:** One part is ethnicity and the other part is relevance, if we divide Tehran into two parts, i.e. traditional and modern votes, it is clear that, traditional or religious voters live in the south of the city, and modernist voters that are more affluent live in the north of Tehran.
- **I 7:** Reformists targeted the citizens in the middle and north of Tehran, and on the contrary, the fundamentalists worked on the voters in the south and middle parts of Tehran.

4.3.6. Message Design Method

Message design is highlighted by the participants in this study. Message designing is done in both imitative and innovative ways in election campaigns.

Table-9 Message Design Method

Modeling Western Political Marketing Practices	Imitative	Message Design Method
Using Elites in the field of Advertising and Journalism	Innovative	

4.3.6.1. Imitative

Message designing is carried out via using political marketing patterns used in Western countries that have already resulted in electoral success.

- **I 11:** The political-electoral marketing that has emerged over the past 4-5 years has been subject of plethora of studies. Such works have studied elections in the western countries with the aim of localizing and using them in the country.
- **I 5**: For example, in 2005, the concept of launching campaigns at the squares was planning. Apparently, the idea came from the Mojahedin-e-Enqelab organization, based on which three or four artists or political celebrities accompanied by a group of young people go to a square. However, the idea was believed to have come from the West!
- **I 11:** I think they mostly lacked specialized knowledge and relied on their experience. It can be said that our electoral atmosphere, the discussion of these slogans, symbols, and colors were taken from the previous elections. For example, in the recent US election, there was a clip that shows Mr. Biden`s dressing up, which was a 15-20 second video of his appearance, or Mr. Barack Obama's personal phone calls to people in which he said "I am Barack Obama, do you remember me?". I believe we are actually following their paths, and in the 2021 election, it is possible to follow the methods that Obama's and Biden's democratic teams tried. I think we can at least say that the reformist camp will use it.
- **I 3:** Some activists like A.G and H.R participated in various campaigns. For example, they took part in in the Obama campaign or other campaigns like that. Therefore, we saw the new types of political propaganda and branding. Because of the connections we had, there was an opportunity to work together on writing a lot of different articles and making video clips, and slogans. Until 2015, we concluded that there must be a think tank to define slogans, colors, etc.

4.3.6.2. Innovative

Message designing is usually done by a community of journalists and advertising activists who have political insight and knowledge and are familiar with media activities and atmosphere. These people are more specialized in the field, and are well aware of the developments and are deemed as the elite class of the society.

- **I 5:** For example, in Iran, a journalist is considered a propagandist. The journalists were very active, and almost in all of the campaigns, they were at the core of the advertising field.
- **I 5:** Every campaign had an advertising committee that consisted of more innovative people, journalists, and graphic designers for illustrating the images in their minds. They gathered together and finally decided.
- **I 5:** All journalists want to work in the Media and Advertising Committee, because it is more emotional and influential and the result is more tangible. Usually, the goal of the campaign is defined in this committee. I think the strongest people always work there.

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- **I 7:** Usually we use the experience of people who work on communication and media. The role of media is very important in election.
- **I 10:** They may have had political experience from previous rounds of the elections or they may have run an advertising company, but they lacked scientific studies.

4.3.7. Message designing features

The messages reach the desired goal are those which strike a chord with the audience. Therefore, by analyzing the statements of the participants in this study, objective, mental and cognitive characteristics of the messages were extracted.

Table-10 Message designing features

Being problem-oriented	Objective features	Message designing features
Being operational		
Being local		
Ease of understanding	Mental and cognitive characteristics	
Being Emotional		

4.3.7.1. Objective features

Each message has characteristics such as problem-oriented, operational, and local. This literally means that the message designers sometimes decide to reflect the current concerns of the society and pay attention to these issues in order to provide more and better opportunities to influence the audience.

- **I 12:** Mr. Rouhani was the head of the Iranian negotiating team in Mr. Khatami's government. Based on this, sending a message to the society for solving foreign problems was acceptable. This was also due to the demand that existed in society.
- **I 8:** At one point, Mr. Rouhani raises the issue of the "Key" and says that I want to present the key to all the problems of the people ... that is, the crisis of inefficiency in the executive management of the country and outside the executive management has spread to the government level and people think their lives are locked. Mr. Rouhani said that I have a key and I want to come and unlock all your problems. This message was very effective. It meant that he felt the lock that people felt on their lives in this country. Someone says I have the key and I want to come and open it.
- **I 11:** We went to Yazd for 2013 election trips with Mr. Rouhani. We told Mr. Rouhani that when you go to the Hazira Mosque in Yazd city, you should mention Mr. Khatami's father, the martyr Sheikh Sadoughi, and Mr. Khatami himself. This was a little difficult for him, because the atmosphere was not so

open in 2013; but we needed their votes, he named them and the crowd at the mosque encouraged Mr. Rouhani several times, and this was one of the positive feedbacks.

4.3.7.2. Mental and cognitive characteristics

Message designers consider a set of mental and cognitive features in two forms of ease of understanding and being emotional. The messages are designed in a way that are more penetrable for the audience and at the same time can stimulate the audience's feelings.

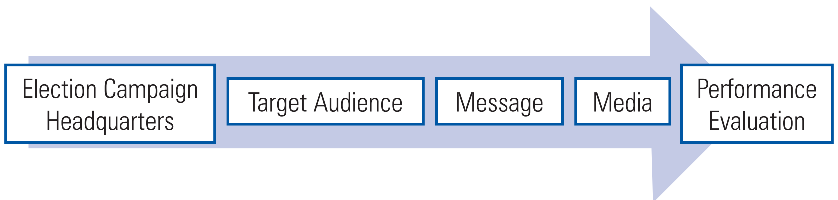
- **I 4:** I remember "I will rebuild my homeland" was Dr. Moeen's slogan. This slogan was made in a meeting attended by a group of 7 to 10 people. As I remember, Mr. Amouzadeh immediately called Ms. Behbahani (the poet of this poem) and received her acceptance to use the poem as an election slogan.
- **I 11:** The year 2013, which was the end of the eight years of Mr. Ahmadinejad's government, was the culmination of anti-Iran sanctions. Mr. Rouhani raised the issue of promoting the value of the Iranian passport.

Based on frequency of codes, 7 main themes were extracted which show 32.2 percent of extracted codes are related to Advertising Tools and 26.2 percent of them pertain to the Campaign Structure. 20.8 percent of codes were allocated to Advertising strategies and 15.8 percent were related to the Audience Analysis. 4.1 percent of frequency of the codes were allocated to Advertising Performance Evaluation. 0.8 percent of the extracted codes belonged to the Message Design Method.

CONCLUSION

This article aimed to address the question of 'How to set the effective media mix to deliver the campaign message to the voters in presidential election campaigns?'. The findings suggest the sequence of 1) selecting the target audience, 2) tailoring the message according to the selected target audiences, 3) composing a mix of media that effectively conveys the message to the target audiences.

Figure 3: Sequence of Audience, Message, Media



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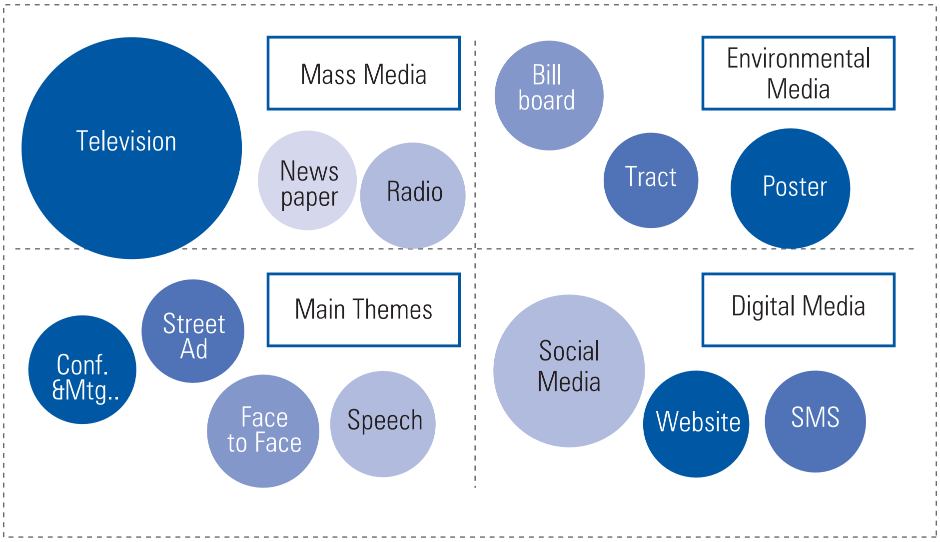
In this process, the target audience selection determines the main campaign strategy. At the first glance, this is not surprising because each campaign clearly invests in its target audience and its own voting base. But we understood that in practice, campaign strategist overlooked the characteristics of the audience in strategy-making; and this negatively affected their ability to select the right combination of media to send the election message. Interviews revealed that the electoral campaigns failed to properly select the audiences, messages, and media to persuade the voters into trusting their plan. However, the gap between the audience and the message was less than the gap between the media mix and message. The analysis of the codes also showed that the gap between the media mix and the message is a major weakness of the campaigns held in the previous rounds of elections in Iran.

Table-12 Media, Audience, and Impacts in election campaigns

Media	Format	Impact	Remember	Target audience
Television	Teaser, Special programs, News coverage, News	Average	High	General
Radio	Teaser, Special programs, News coverage, News	Average	Medium, Top in the case of repetition	low listeners, Because of Being hot media, it is memorable
Website	Data, Statements, Policies, Outlines of programs, Historical information, column	Low	Low	Curious clients
Social media	Short news, sharable, Public Relations, Short Multimedia	Over average	Less due to InformationalConflict	Customary, High impact
Speech	Expressing positions, Expressing emotions, Creating emotional mobilization, Streetadvertising	Top	Less due to deterioration of Short-term memory	Neighborhood-oriented, Audience-oriented, Personal communication
Newspaper	Advertorial, Headlines, Party news	Average	Low	Preservation Current voters Function
Environmental advertising	Posters, Placards, Billboards	Average	Low	General, with the function of Remembering the face of the Individual

Analysis of the codes showed that the use of media mix in Iranian electoral campaigns was as follows:

Figure 4: Use of media mix in the sample study (Iranian electoral campaigns)



Lack of candidates' confidence about being qualified for the final race by the Guardian Council can be blamed for the poor performance of campaigns in setting the required strategy.

The candidates do not start campaigning before they are qualified due to the high costs. When they are authorized to compete in the final race, they need to determine the key officials of their headquarters and then, they start setting the strategy under pressure, and they overlook some key processes due to time pressure. This is unlike the US presidential election process which takes about two years, and the campaign is designed and promoted by the head quarter with a view to presenting effective strategies and policies based on the one or few candidates. The strategists of the campaigns conduct audience analysis, message analysis, and media analysis to send the right message through the appropriate media according to its effectiveness to the intended audience. Finally, after achieving success and the desired goal, the effectiveness of the political marketing process is evaluated to identify strengths and weaknesses and use the results in the future elections.

Another explanation for the poor performance in outlining the campaign strategy lies in the decentralized structure of the campaigns that allow the branches to set their own strategy that might not be integrated with the main campaign strategy. Once the candidate qualifies and appears in final list, he or she initially appoints the head of the campaign or the policy council. The criteria are normally close relationship, trustworthiness and political awareness instead of expertise in political

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marketing and campaign management. Then, the deputies and the committees of the campaign are defined and other active people are engaged in the activities. In many cases these persons are not experts in the electoral campaigns either, and are mostly selected simply, because of their pervious experiences not scientific knowledge. Finally and at the bottom of the pyramid, there are field forces who are usually attracted to campaigns due to their own political orientation and the dynamic atmosphere of the campaigns. They consist of the first-time voters and the youth who perform field advertising, outdoor banner installation and other activities. Journalists and advertising activists in election campaigns are usually present in the advertising and Information deputy and its subcommittees, including speeches, cyberspace, media, etc. They usually comprise the main group of the skilled and professional individuals. This decentralized structure prevents the implementation of an integrated campaign and can be a confirmation for the findings of the study.

The findings of this study stressed that the campaign is necessary but not sufficient for winning the election contest. The success of the campaign must be coupled with other factors, the most important ones including the candidate's personal charisma, strong backing from the influential and powerful supporters, the public environment, the time available for setting and implementing campaign strategy, the performance of an election campaign and efforts to reinforce the campaign performance. Therefore, what has been addressed in this study is a part of the performance of the election campaign, which itself is part of the totality of factors influencing election success.

Figure 5: Effective factors of success in an election (source: extracted from interviews)

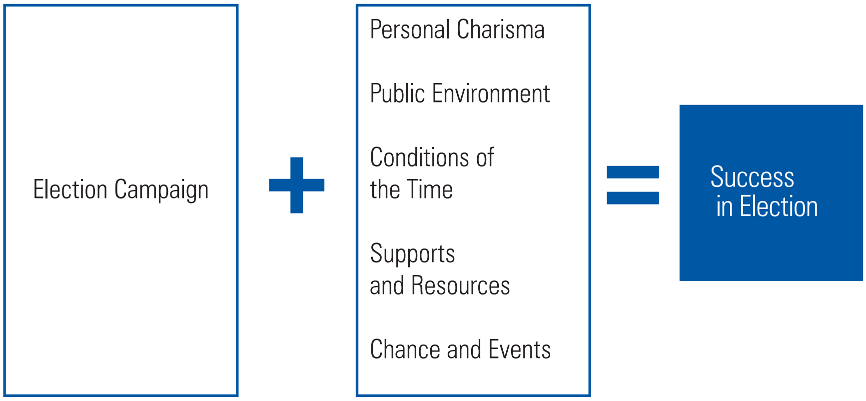
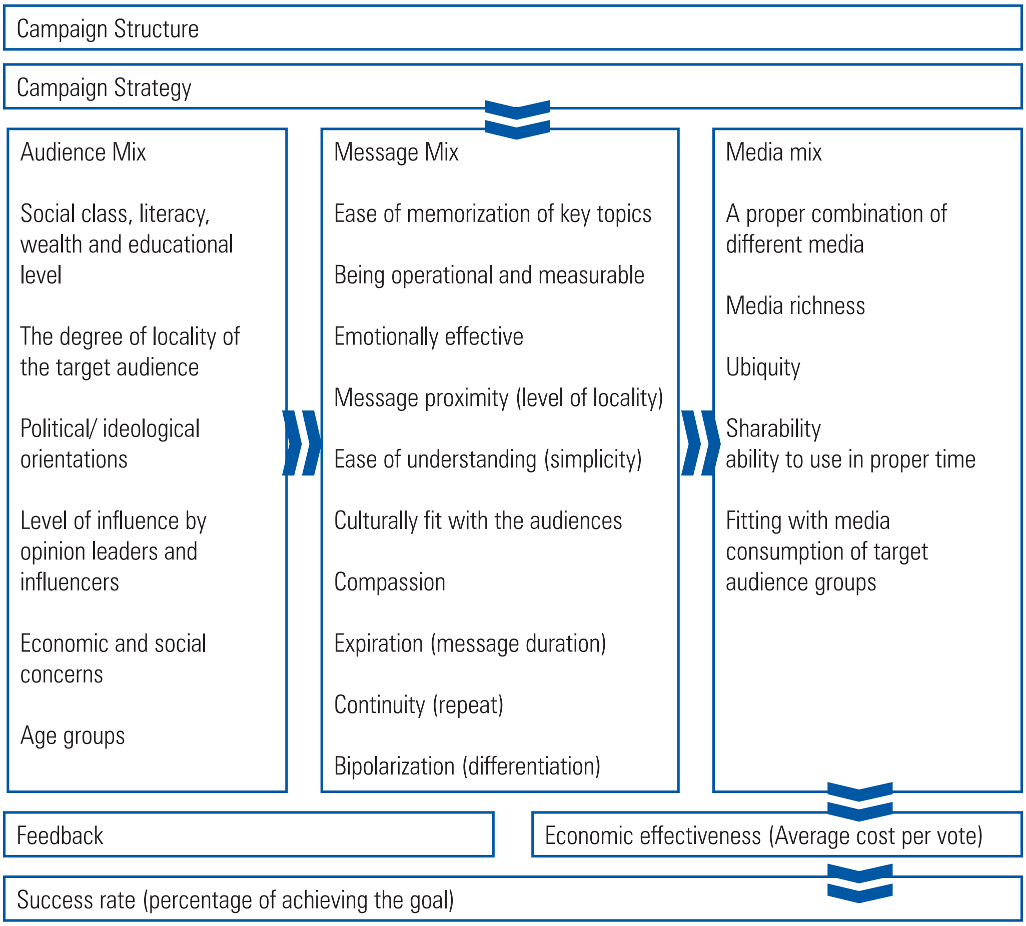


Figure 6 illustrates the final model of this research. It shows how campaign structure impacts the proper formation and implementation of the campaign strategy. Then three mixes are suggested: audience mix, message mix and media mix. 1) Audience mix includes the following factors: a) Social class, literacy, wealth and educational level, b) The degree of locality of the target audience, c) Political/ ideological orientations, d) level of influence by opinion leaders and influencers, e) Economic and social concerns, f) Age groups. 2) Message mix includes a) Ease of memorization of key topics, b) Being operational and measurable, c) Emotionally effective, d) Message proximity (level of locality), e) Ease of understanding (simplicity), f) Culturally fit with the audiences, g) Compassion, h) Expiration (message duration), i) Continuity (repeat), j) Bipolarization (differentiation). 3) Media mix includes a) Proper combination of different media, b) Media richness, c) Ubiquity, d) Shareability, e) Ability to be used in proper time, f) Fitting with media consumption of target audience groups. To measure the performance of this model, economic effectiveness (based on average cost per vote) can be calculated and finally success rate based on the achieving goals can be measured. It is expected that this model will be used as a basis in the future research to develop the strategy setting for electoral campaigns.

Figure 6: The proposed framework for electoral campaign management



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RESEARCH LIMITATIONS

At the very early stage of this research, a participatory workshop was planned as the data collection tool. It was supposed that gathering the samples in one workshop and letting them discuss the strategy development based on their experiences will produce significant results. Due to covid-19 outbreak it became impossible to organize such a workshop. For this reason, deep interviews were used as an alternative data collection method and the data were analyzed via content analysis.

There were also obstacles in conducting this research that needs to be addressed in carrying out similar studies. The first was the selection of those involved in the election campaign. Given the large number of members of the election and media campaigns in the country, it was difficult to select a sample that was both examinable and sufficiently comprehensive in terms of generalizability. The choice of available purposive sampling solved this problem to some extent, but it was still difficult to reach people who provided the codes needed for a proper analysis of the research topic. Therefore, selecting sample members who are both well-informed and willing to be interviewed was one of the most serious challenges of this study. Also due to the political concerns, many practitioners of the previous electoral campaigns declined to participate in this research. Others who participated answered the questions conservatively. This may affect the richness of collected information. In the absence of above limitations, different results could have been obtained. Every effort was made by the researchers to reduce the effect of these limitations by using various tools.

SUGGESTIONS FOR FUTURE RESEARCH

Electoral campaigns can be construed as a core element in elections given the huge amount of money and human efforts spent on them, and their impact on the destiny of nations and societies. Therefore, better understanding of strategy setting to convey the core idea and messages to the target audiences and voters are worth a lot for parties, candidates and political faction, as well as marketers, strategists and media managers. To further develop the findings of this research the following are suggested for future studies:

1. Weighting and ranking different media in the media mix targeting different groups of audiences
2. Modeling media mix according to the generation gap theories to increase the effectiveness of messages on different generations of voters
3. Economic modeling of media mix to identify the most cost-effective ways to attract votes and reduce the average cost of attracting each vote
4. Identifying efficient media mix in different geographical areas according to the demographic characteristics and local concerns and extracting successful samples for comparison
5. Using data mining to identify the investigative behavior of voters during the election decision making period

6. Analyzing big data to understand the highest popular search trends dynamically and analyzing their changes to understand the effectiveness of selective media mixes
7. Analysis of social networks via new tools to identify online communities and their encouraging and persuasive behaviors on social networks

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IMPACT OF INTER-ORGANIZATIONAL AND EXTRA-ORGANIZATIONAL FACTORS ON THE POLICIES OF SCIENCE AND TECHNOLOGY PARKS IN EMERGING ECONOMIES

IMPACTO DE FACTORES INTERORGANIZACIONALES Y EXTRAORGANIZACIONALES EN LAS POLÍTICAS DE PARQUES CIENTÍFICOS Y TECNOLÓGICOS EN ECONOMÍAS EMERGENTES

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JEL: I21, I23, M1

RECEIVED: 13/01/2021

MODIFIED: 24/04/2021

ACCEPTED: 27/05/2021

DOI: https://doi.org/10.17230/Ad-minister.39.9

ABSTRACT

This article aims to study policymaking resulting from the impact of intra- and extra-organizational factors of science and technology parks (S&T parks). This article is classified as applied in terms of objective and quantitative in terms of data gathering. The population comprises senior managers of companies established in the five selected S&T parks, totaling 493. Applying the stratified random sampling method and the Cochran formula, the sample size was determined at 216. The validity of the questionnaire's content was endorsed by professors, experts and pundits. The Cronbach's alpha of the questionnaire was extracted to be higher than endorsed levels in all dimensions, which shows the reliability of the research. Results show that intra-organizational factors (organizational, networking, legal and fiscal), with the intervention of extra-organizational factors (institutional, cultural and contextual, capital and location), lead to development of six S&T park policymaking categories (policymaking for culture and motivation, policymaking for creation of incentives, policymaking for development of capacity and capability, policymaking for infrastructure, policymaking for attracting investment, policymaking for creating business opportunities).

KEYWORDS

S&T parks policy, Intra-organizational factors, Extra-organizational factors.

RESUMEN

Este artículo tiene como objetivo estudiar la formulación de políticas resultante del impacto de factores intra y extraorganizacionales de los parques científicos y tecnológicos (parques C&T). Este artículo se clasifica como aplicado, en términos de objetivo, y cuantitativo, en términos de recopilación de datos. La población está compuesta por altos directivos de empresas establecidas en los cinco parques C&T seleccionados, alcanzando un total de 493. Aplicando el método de muestreo aleatorio estratificado y la fórmula de Cochran, el tamaño de la muestra se determinó en 216. La validez del contenido del cuestionario fue avalada por profesores, expertos y especialistas. Se extrajo el alfa de Cronbach del cuestionario para ser superior a los niveles avalados en todas las dimensiones, lo que demuestra la fiabilidad de la investigación. Los resultados muestran que los factores intraorganizacionales (organizacionales,

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en red, legales y fiscales) con la intervención de factores extraorganizacionales (institucionales, culturales y contextuales, de capital y ubicación) conducen al desarrollo de seis categorías de formulación de políticas de parques C&T (formulación de políticas: para la cultura y la motivación; para la creación de incentivos; para el desarrollo de capacidades y aptitudes; para la infraestructura; para atraer inversiones y para la creación de oportunidades de negocio).

PALABRAS CLAVE
Política de parques C&T, Factores intraorganizacionales, Factores extraorganizacionales.

1. INTRODUCTION

Over recent decades governments have increased their innovation efforts with a view to bringing about economic development and transformation. Governments have pursued different policies in encouraging innovation activities in a bid to realize national industry development. The significance of this issue may stem from: first, the 1970s oil crisis and the necessity of replacing non-oil energy resources (Rothwell, 1994); second, the competitive nature of innovation activities and attention to the hidden economic aspects of technological innovation (Smith & Larimer, 2017); and third, the governments' intention to industrialize their domain on the global scale at a time where economic globalization pushes governments to boost technology research costs (Su & Zarea, 2020). If nations and subsequently companies adopt better policies for knowledge-based companies through S&T parks and applying knowledge more effectively through these parks, they can largely improve their growth and welfare levels.

Globalization is a sign of stimulation of competition and access to new potential markets for nations. In order to win international recognition, public and private organizations and entities should focus on market-product innovations, increasing opportunities and equipping themselves with cutting edge technology. That is key to staying in global competition, which would require policymaking through development of S&T parks and knowledge-based companies (Cuentas et al., 2013).

Innovation issues have become more complicated than before and innovation policymakers are required to be capable enough to confront such complications and find an in-depth understanding of them. Therefore, S&T parks' policymaking has become more effective than before in exploiting knowledge-based and technology companies (Farsi et al., 2011a)

S&T parks keep knowledge and technology running at universities, R&D institutes, private companies and markets and manage the process, while facilitating the growth of innovation-based companies through incubators and spin-off processes. These centers are currently helping establish knowledge-based companies by providing financial, moral and legal support, supplying necessary equipment and facilities, counseling, and preparing necessary workspace. Therefore, S&T parks' policymaking can result in the growth of knowledge-based companies and technology cores (Petti & Zhang, 2013).

Finally, in the statement of problem for this research, it is important to note that the companies established at S&T parks are considered as effective factors in the

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economy and social developments thanks to their skill in identifying opportunities and moving in the direction of development of these opportunities. Therefore, classifying development policies at these companies in terms of internal and external factors could be instrumental in economic development and growth. The main question in this research is focused on the impact of intra- and extra-organizational factors on Iranian S&T parks' policies.

2. THEORETICAL BACKGROUND

S&T policies may be formulated based on traditional objective-oriented criteria. However, what matters is that the more the number of actors and stakeholders in the process of policymaking, the higher the challenges lying ahead (Gomes et al., 2018; Hart & Kleiboer, 1995) The most important reason for the failure of technology policy has been insufficient information about decision-makers and the complexity of partnership between actors (Moreno, 2008; Schön., 1994). For Eriksson & Weber (2008) this process is more challenging for developing nations. The developing nations' understanding of advantages and disadvantages, costs, opportunities and risks of technological option is not sufficient. Meantime, protracted decision-making has not been a first-mover advantage for them (Lee et al., 2008). The existence of a systematic approach vis-à-vis the process of policymaking gives enough space to all actors to fulfill their roles (Conceicao et al., 2003).

S&T parks have emerged as a powerful source of entrepreneurship, talent acquisition and economic rivalry for regions, states and nations. They have been instrumental in infrastructure logistics and economic growth for knowledge-based companies. For the purpose of providing a venue for researchers and companies to be together, S&T parks create an environment encouraging cooperation and innovation, spreading, developing, disseminating and commercializing technology. Three major motives behind S&T parks are presented by (Petti & Zhang, 2013) as follows: reindustrialization, regional development and synergy. According to Soenarso et al. (2013), the S&T parks are designed to empower academies at local universities to commercialize their research ideas and prepare the ground for small businesses using sophisticated technologies.

2.1. S& T Policy Concept

Technology policy refers to policymaking in technology and related sectors, i.e. policymaking for knowledge-based technologies with economic growth core (Hackett et al., 2007). This concept points to policies that are concentrated on technologies and sectors and mainly correspond to the winners and losers' choice among technologies. The idea behind the introduction and application of technology policy, like science policy, is the issue of industrial development and its dependence on various branches of science and techniques. The elements involved in technology policy include universities, research institutes, technology organizations and R&D labs. These policies finally prepare the ground for the facilitation of commercialization (Fagerberg., 2005.). Science, technology and innovation policy covers a group of policies aimed at upgrading activities and processes pertaining to science, technology and innovation to help realize economic and social development (UNCTAD, 2017). Some research conducted on S&T park policy is as follows:

Hove & Zinyama, (2012) conducted research titled "The Challenges of Zimbabwe S&T Policy Formulation from 1980 to 2002". Their paper examines the challenges of S&T policy formulation in Zimbabwe. It divulges the rationale why it took a long period before an S&T policy was originated. The paper reveals that S&T policy development was complex. It was largely the lack of; strong policy, multi-stakeholder involvement, funding and commitment from government ministries mandated with policy formulation and implementation. One of the major institutional problems hindering and interrupting the formulation of the S&T was the disintegration of the policy formulating route. The data were gathered by questionnaires and oral interviews with key informants… The respondents and key-informants were chosen by means of purposive and snowball sampling methods. The study concludes that for S&T policy to be effectively devised and executed, there should be institutional capability amplification and budgetary allocation for the S&T cause.

Hall et al. (2006) conducted a research study on public policy and entrepreneurship. Entrepreneurship is a primary catalyst for economic growth and regional development. Recognizing its importance, state and local policymakers are now devoting considerable resources to fostering entrepreneurship. Their paper presents a framework for thinking about government's role in the entrepreneurial process. They examined the research on macro-level determinants of entrepreneurial activity and found that policies broadly consistent with economic freedom, such as secure property rights, low taxes, and low regulations lead to a robust entrepreneurial environment.

Abdullahi (2004) conducted research titled "an impact assessment of S&T policy on national development of Nigeria". His study aimed to assess the impact of S&T policy on national development of Nigeria. The data generated from interviews and questionnaires were analyzed using quantitative and qualitative methods. The analysis confirmed all the hypotheses stated as well as the fact that S&T policy had not played a critical role in national development and that Nigerian society was not aware of and hardly contributed to formulation of S&T policy. Furthermore, the study revealed that development process in Nigeria failed to recognize the critical role of scientific and technological activities. The country lacked science culture and the existing institutional capacity for S&T development was very weak in terms of requisite personnel and facilities. The study concluded that a new policy shift was desirable which emphasized the promotion of S&T culture, its integration into the production system and the strengthening of institutional framework for policy formulation, implementation, monitoring and evaluation in addition to promotion of S&T literacy. Finally, pertinent recommendations were made which included among

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others, the need for government to place greater emphasis on achieving value-for-money on its expenditure on research. This demands an increase in activities on R&D evaluation as well as strengthening of infrastructure for information and knowledge dissemination. The summarized results are given in Table 1.

Table 1: Research on S&T Parks Policy and Related Classification

Dimensions	Component	Research Cited
Policymaking for creating business opportunities	Obstacles to entry/deregulation, access to foreign markets, transfer of technology, private demand requirements, supply regulations	(Kostka, 2014; Mu & di Benedetto, 2011; Wasim, 2014)
Policymaking for attracting investment	Loans, tax on wealth and heritage, business angels, venture capital, tax on fortune, stock market and corporate buyout	(Bergek et al., 2015; Prodan, 2007; Saji & Mishra, 2013; Silva et al., 2020; UNCTAD, 2017)
Policymaking for developing capacity and capability	Traditional business training, entrepreneurship, restart	(Aarikka-Stenroos & Sandberg, 2012; Seyoum, 2004; Zaridis & Mousiolis, 2014)
Policymaking for infrastructure	Entrepreneurship infrastructure (public), entrepreneurship infrastructure (private)	(O'shea et al., 2004; Smith & Larimer, 2017; Teece, 2010)
Policymaking for creating incentives	Tax on private income, tax on businesses and fiscal incentives, social security, administrative responsibilities, labor market rules, bankruptcy rules	(Bali & Zarea, 2018; Padilla-Pérez & Gaudin, 2014; Shaw & Allen, 2018)
Policymaking for culture and otivation	Entrepreneurial motivation, special incentives, communication with legends	(Bergek et al., 2015; Gibb & Hannon, 2006; Jack et al., 2009; Machnik- Słomka & Kordel, 2016)

2.2. Intra-organizational factors and S&T park policy

Bigliardi et al. (2006) believe that science parks follow various objectives depending on the impact on the organization and the region. The objectives related to companies include facilitating transfer of technology, encouraging existing technologically-advanced companies, attracting companies engaged in state-of-the-art technologies and developing strategic alliances/networks. The objectives related to regional impacts include development of region, creation of jobs and increasing credit allocation (Bigliardi et al., 2006). In the following research, the intra-organizational factors and policymaking at S&T parks are discussed.

Wasim (2014) conducted research on the factors involved in science park planning. His findings identified the factors effective in S&T park planning as follows: government (administration, stakeholders, target group, capital, technological concentration), growth (networks, business support, infrastructure, motivations, culture), external factors (R&D policy, financial policy, stock markets, unofficial economy, foreign investment).

Soenarso et al. (2013) conducted research about innovation-based development of S&T parks in Indonesia with a view to supporting local economy. Their research showed that such factors as stakeholders, systematic support by central and local governments, providing suitable infrastructure, encouraging research cooperation and increasing R&D budget were significant factors in the development of S&T parks. Finally, S&T parks provide a platform for the development of national and regional innovation systems.

Wonglimpiyarat (2013) conducted a research study titled "innovation financing policies for entrepreneurial development — Cases of Singapore and Taiwan as newly industrializing economies in Asia". This paper is concerned with the innovation financing policies for entrepreneurial development of Singapore and Taiwan, the first-tier countries/newly industrialized economies in Asia. In particular, the study focuses on the venture capital and capital market funding policies. The study has shown that the government intervention model is successful in Singapore and Taiwan as a result of having clear-cut agencies responsible for carrying out policy implementation. Both countries also have stock markets for high-tech industries with flexible market-entry regulations to support technology development. The study offers empirical reasons on effective innovation financing policies to support the national economic development. The results are then summarized in Table 2.

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Table 2: Research on intra-organizational factors and policies of S&T Parks

Dimensions	Component	Research Cited
Networking	Entrepreneurship networks, small social groups, lab and research networks, bank and nonbank financial institutions, technology diffusion investors, information providers, external intermediaries	(Gomes et al., 2018; Jack et al., 2009; Ye et al., 2012)
Organizational	Identification, exploration, creation and exploitation of opportunity, management of knowledge, capital budgeting, education changes management, capacity of absorbing specialized forces	(Allameh et al., 2011; Caruth & Handlogten, 1988; Hendricks, 2015)
Legal	R&D entities at private companies, research institutes supporting state-universities, institutions supporting intellectual property rights, industrial and academic facilitators, scientific research institutes, supporters of commercialization process, financial sponsors	(Guadix et al., 2016; Markman et al., 2008; Rust, 2015)
Fiscal	Innovative financial mechanisms, innovative marketing mechanisms, innovative rewarding mechanisms, government regulation policies, global concerns on environment; significance and necessity, knowledge-based industries and their growing role in economy	(Petti & Zhang, 2011, 2013; Saji & Mishra, 2013)

The research hypotheses are as follows:

Hypothesis 1: Intra-organizational factors affect policy designed by S&T parks in Iran.

Hypothesis 2: Intra-organizational factors affect extra-organizational factors at S&T parks in Iran.

2.3. Extra-organizational factors and S&T park policy

Borrás & Edquist (2013) have concluded that S&T parks are built mainly due to the necessity of reindustrialization of a region, necessity of establishing new high-tech companies, or with a view to boosting local companies through transfer of technology. Economic development may become more instrumental in the old process of production through applying new technologies (IT, new materials and biotechnology among others) In the following research, extra-organizational factors and policy of S&T parks have been examined.

Hall & Sobel (2006) conducted research on public policy and entrepreneurship. Entrepreneurship is the main catalyst for the growth and development of regional economy. They examined the research on macro-level determinants of entrepreneurial activity and found that policies broadly consistent with economic freedom, such as secure property rights, low taxes, and low regulations lead to a robust entrepreneurial environment.

Padilla-Pérez & Gaudin (2014) conducted research titled “science, technology and innovation policies in small and developing economies: The case of Central America”. The policy instruments identified in this research are as follows: institutional framework (national science, technology and innovation plan; assessment of science, technology and innovation policy; technology; intellectual property rights; administrative mechanisms; public education system; national strategy; standardization; qualitative policy; public procurement policy); financial (financial motivation, financing innovation. Planning to upgrade interaction between innovation system actors, private-public relationship organizations; promoting significance and functionality of science, technology and innovation; public organs).

Hove & Zinyama (2012) conducted research on challenges to formulation of S&T policy in Zimbabwe from 1980 to 2002. Their findings showed that one of the recent major institutional problems in the adoption and finalization of S&T policy stems from the process of S&T Park policy. The study found no organizational cohesion and consolidation. Also, it revealed that lack of institutional coordination between the minister of higher education and technology, the Institute of Development Studies and the Research Council of Zimbabwe hindered the development and formulation of S&T policy. Furthermore, the study emphasized that an effective implementation of S&T policy required upgrading institutional capabilities and allocation budget to S&T. The summarized results are given in Table 3.

Table 3: Research on extra-organizational factors and policy of S&T parks

Dimensions	Component	Research Cited
Institutional	Tax code, imports/exports law, market entry laws (licenses, etc.), regulatory agencies, bankruptcy rules, corporate registration rules, macro-objectives and policies, laws of activity, intellectual property laws, general policies tendency, immigration rules, labor law, legal system, anti-monopoly laws, industrial policies, industrial environment	(Guadix et al., 2016; Smith & Larimer, 2017; Xie et al., 2018)
Capital and location	Financing resources and approaches, investment banks, business angels, investors’ tendency to financing small technological enterprises, capital market, financing through government centers, state partnership investments, foreign investors, credit scoring system, high-risk investors, rivalry between fiscal entities	(Cuentas et al., 2013; Gupta et al., n.d.; Talebi et al., 2010)
Cultural and Contextual	Successful individual models, open transnational society, cultural events of entrepreneurship, open forums, entrepreneurial campaigns, communications and branding, media coverage, tendency to entrepreneurship, risk exposure, accepting entrepreneurship, admission to failure, respecting failure, respecting investors, culture of accountability, culture of innovation and creativity, entrepreneurial vision, social capital	(Bigliardi et al., 2006; FARSI et al., 2011b; Siegel et al., 2007)

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The research hypotheses are as follows:

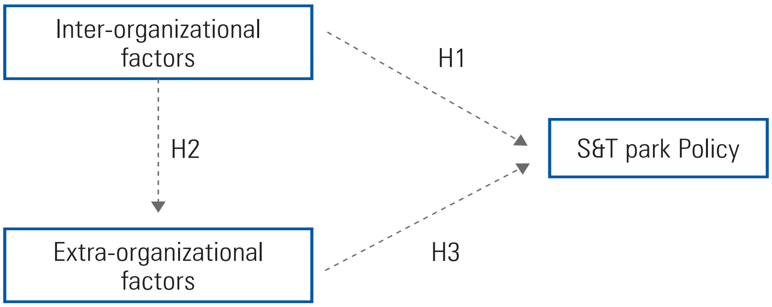
Hypothesis 1: Extra-organizational factors affect policy designed by S&T parks in Iran.

Hypothesis 2: Extra-organizational factors affect policy designed by S&T parks in Iran through intra-organizational factors.

2.4Conceptual Model

Given the literature review, the conceptual model for this study is illustrated in Figure. 1.

Figure 1: conceptual model



3. RESEARCH METHODOLOGY

This research is classified as applied in terms of objective and quantitative in terms of data gathering. To realize the research objectives, library studies were conducted, the Internet was used and internationally recognized databases were consulted with the focus on the identification of dimensions. In the following step, based on the extracted dimensions, a questionnaire was designed and distributed among the sample subjects. Finally, the questionnaire's data was analyzed using LISREL software.

3.1. Population and Sample Space

The population comprises managers and senior experts of companies established at five top S&T parks, based on the classification of Ministry of Science, Research and Technology, in the provinces of Fars, Isfahan, Khorasan Razavi and Guilan as well as in Pardis. Using simple random stratified sampling in which all members have equal chance to win, the samples were selected. The Cochran formula was then used to determine the sample size at 216. Table 4 shows the number of samples for each stratum:

Table 4: Stratified Sampling of Parks and Companies

S&T Park name	Frequency of Stratum	Ratio of Frequency to Population	Number of Samples
Isfahan	92	0.19	42
Khorasan Razavi	137	0.27	59
Guilan	68	0.14	31
Pardis	101	0.21	43
Fars	95	0.19	41
Total	493	1	216

3.2. Data Gathering Methods

Questionnaire was chosen as a proper tool for data gathering. It comprised three sections as follows: Section 1 (Introduction) comprised a summary, objectives and necessity of research in addition to demanding that respondents answer questions; Section 2 comprises demographic questions including particulars like gender, last university degree, age and job experience and occupation; Section 3 comprises 95 specialized questions. Ordinal scale, more specifically five-point Likert scale, was used in designing the questionnaire.

3.3. Validity Assessment Method

The validity of the questionnaire was evaluated by advisors and supervisors, five faculty members and five directors of S&T parks.

3.4. Reliability Assessment Method

The Cronbach alpha method was used to evaluate the reliability of the test. The results are given the section 4-2-1.

4. ANALYSIS OF FINDINGS

4.1. Descriptive Statistic for Research Variables

With data gathered from the questionnaires, average statistics, standard deviation, skewness and kurtosis are extrapolated for the research variables which are as follows: 1. Factors affecting S&T Park policy (intra-organizational, extra-organizational); 2. Inter-organizational factors (organizational, networking, legal and fiscal); 3. Extra-organizational factor (institutional, cultural and contextual, capital and location). See Tables 5 and 6.

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Table 5: Descriptive statistics for S&T Park policy variables, extra-organizational factor and related dimensions

	Networking	Intra-Organizational	Institutional	Extra-organizational	Governance	Financial	Cultural and Contextual	Policy making	Extra-organizational factor
Average	3.6978	3.7519	3.4489	3.4190	3.8628	3.7288	3.4877	3.5794	3.6931
Standard deviation	.74033	.73649	.70880	.73541	.56922	.69194	.64640	.63394	.53285
Skewness	-.597	-.431	-.137	-.111	-.115	-.497	-.128	-.373	-.035
Kurtosis	.893	.780	.571	.466	-.291	.953	.738	1.573	.465

Table6: Descriptive statistics for inter-organizational factor variables and related dimensions

	Business Opportunity	Investment attraction	Capacity Development	Infrastructure	Motivation and Incentive	Culture and Motivation	Inter-organizational factors
Average	3.6056	3.9429	4.0540	4.1921	4.3179	4.2932	4.0676
Standard deviation	.79086	.66518	.75785	.77991	.70803	.73764	.61271
Skewness	-.573	-.684	-.945	-1.557	-1.585	-1.539	-1.478
Kurtosis	.363	2.280	1.718	3.933	3.575	3.493	4.754

As the tables show the research variables lie within an acceptable range for skewness and kurtosis. The acceptable range for skewness and kurtosis varies between -3 and 3 and as long as a variable lies in this range it has normal distribution.

4.2. Modeling of Structural Equations and Smart PLS Software

4.2.1. Research Measurement Model Assessment

Results of assessing the measurement model based on the extracted values are provided in Table 4. As the results show, validity (convergent validity index or average variance extracted (AVE)) is assessed as appropriate in the model and the model has acceptable reliability (composite reliability and Cronbach's alpha). AVE with value of more than 0.5 for each variable indicates appropriate convergent validity (Ebrahimi & Mirbargkar, 2017). In the table7, convergent validity values are more than 0.5, thereby confirming the convergent validity of concepts.

Table 7: Composite Reliability, Cronbach's alpha, and AVE

Factors	Composite reliability	Cronbach's alpha	AVE
Intra-Organizational	0.838270	0.755144	0.515064
Extra-organizational	0.892897	0.856161	0.581668
S&T Park policy	0.943233	0.936888	0.502171

Based on different resources, for a tool to be deemed as reliable, the alpha coefficient and CR should be at least 0.7. (Khajeheian & Ebrahimi, 2020). Therefore, the reliability of the measurement tool is confirmed.

4.2.2. Model Fit

The variance index explained for the endogenous constructs of the model were examined to show to what extent the dependent variable predicted or explained the independent variable. With goodness of fit (GOF) equaling 0.620, a positive value, the entire model fit is described as positive. Since it is higher than 0.35, it is said to be an optimal value. Therefore, the model's fit is confirmed (Table 8).

Table 8: Table 5: GOF Reliability Index

Row	Factors	R2	COMMUNALITY	GOF
1	Intra-Organizational	0.734660	0.515064	$GOF = \sqrt{\overline{Communality} \times \overline{R^2}} = 0.620$
5	Extra-organizational	0.685748	0.581668	
10	S&T Park policy	Exogenous	0.402171	
Average		0.713	0.540	

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4.2.3. Analysis of Paths Using Linear Structural Relationships

After determining measurement models, in order to assess the conceptual model of the research and ensure the existence or non-existence of a causal relationship between the research variables and examine the consistency of observed data with the conceptual model of the research, the paths were also tested using the structural equations model. The inter-organizational factor of the conceptual model, developed by the PLS software, is illustrated in Table7 .

4.2.3.1. Standard Coefficients

Based on the significance value of 0.05, the critical should be more than 1.96. Any value lower than that would not be considered as significant. Furthermore, p-values lower than 0.0 indicate significant difference in the values calculated for regression coefficients of zero for p-value = 0.95.

4.2.3.2. T-Value Coefficient

The diagram below illustrates the significance level for the variable items in the research. It has to be noted that a significance level above 1.96 and below -1.96 is acceptable. As the diagram shows, the factor loadings in the questionnaire have a good significance level as they are all above 1.96. Therefore, the validity of the items' construct and structure is confirmed. Furthermore, all paths between variables are significant because they are greater than 1.96.

4.2.4. Q2 Index, CV-Red, CV-Com

The models with acceptable structural fit should be able to predict indices related to the endogenous structures of the model. In other words, if in a model, the relationship between structures is defined correctly, they can sufficiently affect other indices to pave the way for the confirmation of hypotheses. Henseler et al. (2013) have determined the three values of 0.02, 0.15, and 0.35 for weak, average, and strong prediction, respectively in endogenous structures. If is equal to or less than zero for an endogenous structure, its relationship with other structures of the model has not been explained optimally. To calculate the value in the PLS software, the blindfolding technique is used. Therefore, the Cross-validated Redundancy (CV-Red) and Cross-validated Communality (CV-Com) are calculated as shown in Table 9:

Table 9: CV-Red and CV-Com Values

Factors	CV-Red	CV-Com
Intra-Organizational	0.371	0.282
Extra-organizational	0.388	0.408
S&T Park policy	0.306	0.356

Positive values show the optimal quality for the model. As shown in the table, the values have been calculated as positive for all structures of the research. Furthermore, all variables are generally varying between 0.15 and 0.35 or are greater than 0.35. Therefore, the prediction power of the structures of the research is assessed as medium to strong.

5. CONCLUSION

In examining the model of S&T park policy with entrepreneurial approach we concluded that this S&T Park policy has organizational, institutional, networking and extra-organizational aspects affecting inter-organizational and extra-organizational factors. The inter-organizational factors include culture and motivation, creating business opportunity, attracting investment, developing capacity, creating motive and incentives and providing infrastructure. The results also indicated that the direct effect of S&T Park policy on the inter-organizational factors is weaker than its indirect impacts when extra-organizational factor mediators are concerned. The results are summarized in the table 10:

Table 10: Results Summary

Hypothesis	Independent Variable	Dependent Variable	Mediator	Coefficient	Significance Level	Results
1	S&T Park policy	Inter-organizational	-------	0.240	1.988	Approved
2	Extra-organizational factor	Inter-organizational factors	-------	0.975	4.6	Approved
3	S&T Park policy	Extra-organizational	-------	0.931	57.056	Approved
4	S&T Park policy	Inter-organizational factors	Extra-organizational factor	0.788	16.82	Approved

Hypothesis 1: There is a direct path between S&T Park policy and inter-organizational factors. This path is confirmed with a coefficient of 0.240 and a significance level of 1.988 which is greater than 1.96. Therefore, this hypothesis is confirmed.

Hypothesis 2: There is a direct path between extra-organizational factor and inter-organizational factors. This path is confirmed with a coefficient of 0.957 and a significance level of 4.600 which is greater than 1.96. Therefore, this hypothesis is confirmed.

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Hypothesis 3: There is a direct path between S&T Park policy and extra-organizational factor. This path is confirmed with a coefficient of 0.932 and a significance level of 57.056 which is greater than 1.96. Therefore, this hypothesis is confirmed.

Hypothesis 4: There is an indirect path between S&T Park policy and inter-organizational factors, considering the extra-organizational factor mediator. Therefore, this hypothesis is confirmed. The general impact is calculated by dividing the indirect impact by total. The general impact equals 0.788 and since the Sobel Test has yielded 16.82 which is greater than 1.96 it may be concluded that the path based on the mediatory role of the extra-organizational factor variable is significant. Given the results of the model fit index and standard coefficients and significant values, it may be concluded that the research model has been confirmed.

The impact of external network on the model of S&T parks and knowledge-based companies' policy with entrepreneurial approach was confirmed. Jack et al. (2009) describe the real activity of networking as a system enabling the entrepreneurs to obtain resources which are not under their control. The social network of entrepreneur facilitates access to necessary and key resources for benefiting from opportunities and upgrading the entrepreneurial efficacy, particularly in environments with limited resources. Mediatory enterprises are organizations or organized groups making efforts to develop innovation in the business models of enterprises. Such efforts are made either directly through innovating enterprises and developing the innovative capacity of product and process in an enterprise or indirectly through upgrading innovation in national, regional or local systems of innovation (Ye et al., 2012).

The impact of organizational factors on the model of S&T parks and knowledge-based companies' policy with entrepreneurial approach was confirmed. Opportunity identification is one of the most important capabilities of successful entrepreneurs, thereby being a key factor examined in entrepreneurship research (Moreno, 2008). Identifying and choosing optimal opportunities for new businesses is among the most important capabilities of successful entrepreneurs. Therefore, describing the discovery and development of opportunities constitutes a key element in entrepreneurship research (Zarea et al., 2010).One objective of recruitment is to make sure that the organization would constantly have an acceptable number of high-quality staff to be employed at the right place and the right moment to secure a successful inter-organizational factor (Jimenez-Moreno et al., 2013; Talebi et al., 2010). Recruitment is instrumental in the short-term and long-term performance, growth, durability and success of contemporary organizations. In fact, it is only through effective recruitment and employment that every organization – regardless of its size, industry, scope or objectives – may prove efficient and durable (Caruth & Handlogten, 1988).

The impact of institutional factors on the model of S&T parks and knowledge-based companies' policy with entrepreneurial approach was confirmed. By preparing legal mechanisms and adopting necessary policies, universities can become stakeholders in academic corporates maturing in incubators to spend revenues obtained in this way through a synergic process on research and development of knowhow (Su & Zarea, 2020; Teece, 2010). Universities are highly instrumental in accelerating the search for national objectives and changes towards a knowledge-based economy (Smith & Larimer, 2017) and are expected to play a more active role in national and local economic development. University professors and managers play a fundamental role in establishing the culture of commercialization (Wonglimpiyarat, 2013)

The impact of extra-organizational factors on the model of S&T parks and knowledge-based companies' policy with entrepreneurial approach was confirmed. This literally means the government can upgrade a cognitive environment and subsequently boost entrepreneurial capabilities through education programs or counseling services, and improve a normal environment for entrepreneurship by resorting to widespread publicity and spreading entrepreneurship in society with a view to creating a positive impression of entrepreneurs in order to increase the entrepreneurs' motive (Rust, 2015) With such corporates bringing together a variety of skills, capabilities and specialists, creativity and innovation hit maximum levels as a result, which would in turn play a fundamental role in technological development and economic prosperity (Borrás & Edquist, 2013)

6. SUGGESTIONS

6.1. S&T Park policy suggestions

1. For the first path, i.e. direct line between S&T Park policy and inter-organizational factors, in light of average S&T Park policy value of 3.7 and the average inter-organizational factor value of 4.06, it is recommended that entrepreneurship networks be established, small social groups be formed, lab and research networks be equipped, investors in technology and information procurement be engaged and cooperation with foreign mediators in networking in S&T Park policy be envisaged.
2. For the second path, i.e. direct line between extra-organizational factor and inter-organizational factors, in light of the average extra-organizational factor value of 3.69 and the average inter-organizational factor of 4.06, it is recommended that market rules and regulations be honored, macro-level objectives and policies be pursued, general policies be adopted, anti-monopoly regulations and industrial policy be applied, numerous sources and solutions be used for financing, investors brace for financing small-sized technological enterprises and government centers embrace extra-organizational factor through joint investments.
3. For the third path i.e. direct line between S&T Park policy and extra-organizational factor, in light of the average S&T Park policy value of 3.57 and the average extra-organizational factor value of 3.69, it is recommended that opportunities be identified, discovered, developed and put into practice,

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knowledge be managed correctly, budgeting be arranged, and capacities of employing specialized workforce be enhanced to help upgrade organizational factors in S&T Park policy.

4. For the fourth path, i.e. indirect line between S&T Park policy and inter-organizational factors with the mediatory role of extra-organizational factor, it is recommended that R&D entities be established in private companies and institutions supporting intellectual property rights, supporters of commercialization process be hired, financing institutes be engaged, mechanisms of innovative marketing be applied, promotional innovative mechanisms be worked out, arrangement be made with the government-regulated policy, access to foreign markets be relaxed, venture capital be facilitated, traditional business and entrepreneurship be educated.

6.2. Future Research

The Researcher will finally present new visions that can lead other researchers who intend to conduct similar work. Therefore, the present research can serve as a practical basis for other research studies on modeling policy for S&T park and knowledge-based company with entrepreneurial approach. Any research, albeit considered as comprehensive, cannot take into account all aspects due to various restrictions pertaining to topic and time. The present research was no exception to this rule. Therefore, the following suggestions are made for future research on this topic:

1. Designing requirements and standards of implementation of S&T park development policy;
2. Outlining model of implementation of S&T park development policy;
3. Analyzing the topic of the present research in other similar organizations (small, medium and large-sized organizations) or various industries for comparison;
4. Looking at the structural aspects of S&T Park policy as a modifying actor in organizations;
5. Scrutinizing the impact of external changes on S&T Park policy in other companies;
6. Inspecting the relationship between S&T Park policy and entrepreneurial approach: How come when organizations embark on their organizational entrepreneurship efforts to change the results, senior managers finally expect such attempts to positively affect the financial situation of the organization.

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KNOWLEDGE COMMERCIALIZATION FRAMEWORK: FACTORS AFFECTING DEVELOPING COUNTRIES

MARCO DE COMERCIALIZACIÓN DE CONOCIMIENTO: FACTORES QUE AFECTAN A LOS PAÍSES EN DESARROLLO

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RECEIVED: 19/11/2020

MODIFIED: 04/02/2021

ACCEPTED: 27/03/2021

DOI: https://doi.org/10.17230/Ad-minister.39.10

ABSTRACT

Amid economic pressure and inclination for independent financing, universities tend to commercialize knowledge, a growing trend emerging as an entry gate for the privatization of scientific advancements and the development and transfer of technology from universities. Numerous studies have been conducted on the commercialization of knowledge. This article aims to integrate previous studies and develop a comprehensive model out of the factors cited in those studies. Therefore, 57 relevant articles were analyzed to identify the indices of knowledge commercialization within the framework of a systematic review literature guideline. In addition to guideline validate criteria, three university professors were interviewed for conceptual model include the subjects (contextual, individual, organizational, institutional, and environmental), and components.

KEYWORDS

Knowledge commercialization, Commercialization performance, Antecedent of commercialization.

RESUMEN

En medio de la presión económica y la inclinación por el financiamiento independiente, las universidades tienden a comercializar el conocimiento, una tendencia creciente que emerge como una puerta de entrada para la privatización de los avances científicos y el desarrollo y la transferencia de tecnología desde las universidades. Se han realizado numerosos estudios sobre la comercialización del conocimiento. Este artículo tiene como objetivo integrar estudios previos y desarrollar un modelo integral a partir de los factores citados en esos estudios. Por lo tanto, se analizaron 57 artículos relevantes para identificar los índices de comercialización del conocimiento en el marco de una guía de revisión sistemática de la literatura. Además de los criterios de validación de la guía, se entrevistaron tres profesores universitarios para que el modelo conceptual incluyera las áreas (contextual, individual, organizacional, institucional y ambiental) y los componentes.

PALABRAS CLAVE

Comercialización del conocimiento, Desempeño de la comercialización, Antecedente de comercialización.

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1. INTRODUCTION

Due to the change in governmental policies and monitoring systems, universities pay great attention to their economic roles and tend to appear more effective in order to be able to have access to governmental budgets (OECD, 2002; Finardi & Breznitz, 2017). According to a report by the Organization for Economic Co-operation and Development (OECD, 2002), many countries have modified their academic systems, as part of efforts to become more independent, competitive, and cost-effective via the commercialization of research results (Davari et al., 2018). In addition, universities have significantly boosted their policies propping up commercialization and Technology transfer. Etzkowitz et al. (2000) recommend that a pattern is emerging in different geographical locations, signaling a change in entrepreneur universities. The change results from developments inside universities, external factors impacting academic structures, and maybe the increase in the classification of innovation at a regional level. According to Zhou (2008), the Entrepreneur University models are emerging (Park & Ryu, 2015; Salamzadeh et al., 2017).

Etzkowitz & Leydesdorff (1997) believe that the changes in universities' missions have enabled many of them to secure budgets that are greater than non-governmental sources. Generally, universities can contribute to economic development by interacting with the existing industries and via commercialization of knowledge which in turn helps open up business opportunities. Many universities take their opportunities to guarantee and develop their activities in society by proving to be effective (Etzkowitz & Leydesdorff, 1997; Wu et al., 2015).

In most countries, governments are reducing their role in financing universities. Therefore, universities should envisage financial independence and find ways to finance their activities without any prejudice to their mission, assignments, norms and values. With knowledge having become the main competitive advantage, world nations are pushed to pay due attention to the centers of development of knowledge and its transfer to other sectors, while embarking on essential reforms in processes, missions and performances (Siegel et al., 2004).

With a more precise look into the factors presented in various research, one may conclude that there has never been a comprehensive conclusion by a researcher or institute on the driving forces and all aspects have not been taken into consideration for the development of knowledge commercialization, therefore leaving a void for a proper model. For instance, Muir et al. (2005) classified knowledge commercialization factors under inputs, outputs and outcomes (impacts), thereby ignoring many driving indices.

Studying the commercialization of research and technology and its various dimensions are of great significance, as such analyses provide managers and policymakers with essential insight for efficient decision-making (Min et al., 2019; Rothaermel et al., 2007; Salamzadeh et al., 2017). Therefore, it is critically important to determine which factors can significantly affect the development of academic

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companies, licenses, and technical knowledge. It is also necessary for national brokers, research and development managers, and technical managers to consider such factors. The present study's central question is: "What is the conceptual framework of the Antecedent of Knowledge Commercialization?"

2. THEORETICAL FRAMEWORK

In the present study, Phan & Siegel (2006) classification was used to establish a theoretical framework, comprising three main subjects: institutional, organizational, and individual ones. The mentioned subjects were used as the criteria for designing and collecting the required data. Although the components of this framework were developed after holding systematic analysis, the researchers took the theoretical framework into the account in order to deepen their knowledge of the study.

Individual factors: They deal with the factors related to individuals and the researcher's individual qualities, which affect the commercialization function of academic studies.

Institutional factors: They refer to a set of factors connected to rules, regulations, authorizations, norms, and public beliefs and are related to the commercialization function of academic studies.

Organizational factors: They highlight the potential importance of organizational factors and refer to the considerations about the structures, processes, and other organizational factors affecting Technology Transfer from universities to industries.

Knowledge commercialization performance: In this research, the knowledge commercialization performance follows the definition presented by Phan & Siegel (2006), factoring in faculty members and academic researchers who seek to benefit from their research results through receiving patent, obtaining license and partnership in the ownership of university spinoffs. It is important to note that every academic thought aligned in the value chain of knowledge can become an integral part of the commercialization performance. Therefore, in this research, the performance of knowledge commercialization comprises any activity by faculty members that would lead to development of products and services with the focus being on its direct or indirect effectiveness in economic and social development.

3. METHODOLOGY

The research method used in this article is qualitative and, more specifically, a Systematic Literature Review. This method is proper specifically when the research literature is rich in content about the subject of study, in which case, a systematic method may be applied to identify, classify and summarize the underlying components of the phenomenon studied (Okoli & Schabram, 2012). The Okoli & Schabram (2010) guide in the systematic literature review with eight steps has been applied:

3.1. Purpose of the literature review

The main objective of this research is to study the identification of precursor factors in knowledge commercialization. The critical point is that these factors have not been studied in previous research in terms of a comprehensive model. Also, antecedent factors concerning interrelation can help the right decision between science policymakers and research directors. The main question of this research is to know the antecedent factors of performance of knowledge commercialization and how they are interrelated based on previous studies.

3.2. Protocol and training

The Whole review is entirely governed by one of the authors in each step. This strategy helped researchers to simultaneously validate the research and operational steps of the systematic review literature. The authors trained Note-taking techniques and Reviewing techniques to be clear and in agreement about the detailed procedure to be followed.

3.3. Searching for the literature

In order to search through related works, in this systematic review study, the articles published in English between 1991 and 2019 were searched on Web of Science Core Collection (http://www.webofknowledge.com) for such keywords as knowledge commercialization, innovation commercialization, commercialization of academic knowledge, university commercialization and commercialization in the titles, abstracts and keywords. By applying search strategies as well as AND/OR operators, 3179 articles were found in the first phase.

3.4. Practical screen

Authors conducted the search in the databases. Therefore, the keywords mentioned above were searched in the title, abstract and full text of the articles. Furthermore, other commercialization-related materials as well as effective commercialization factors were considered as criteria for the study input. The studies whose title and abstract were not related to innovation and knowledge commercialization or did not match organizational criteria were excluded. The Practical screen is precisely focused on the "knowledge commercialization". The articles found in more than one search were excluded, leaving 3070 articles. The articles' consistency was determined with

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the research subject, contents (topic and variables), the abstracts, and the keywords. Based on the title and abstract of the articles, a total of 2453 unrelated articles that had studied commercialization without knowledge commercialization were excluded. Base on this criteria, the abstract and full text of the remaining 617 articles underwent an in-depth review, which led to the exclusion of articles not matching necessary criteria or not being fully available.

3.5. Quality appraisal

Date of publication: Due to the inclusive and extended meaning of "commercialization" and "knowledge", only research published after 1991 and in English was reviewed.

Type of Study: Due to the topic of the research, only quantitative, qualitative or combined quantitative-qualitative studies whose results had been presented at various organizational, national and international levels were reviewed.

Therefore, after excluding unrelated and duplicate articles, screening, qualitative assessment and exclusion of fully unavailable articles (the articles published in English journals, but unavailable free of charge), of a total 3179 articles obtained in the initial search, only 57 articles were selected to match the current study's criteria, which underwent a final analysis.

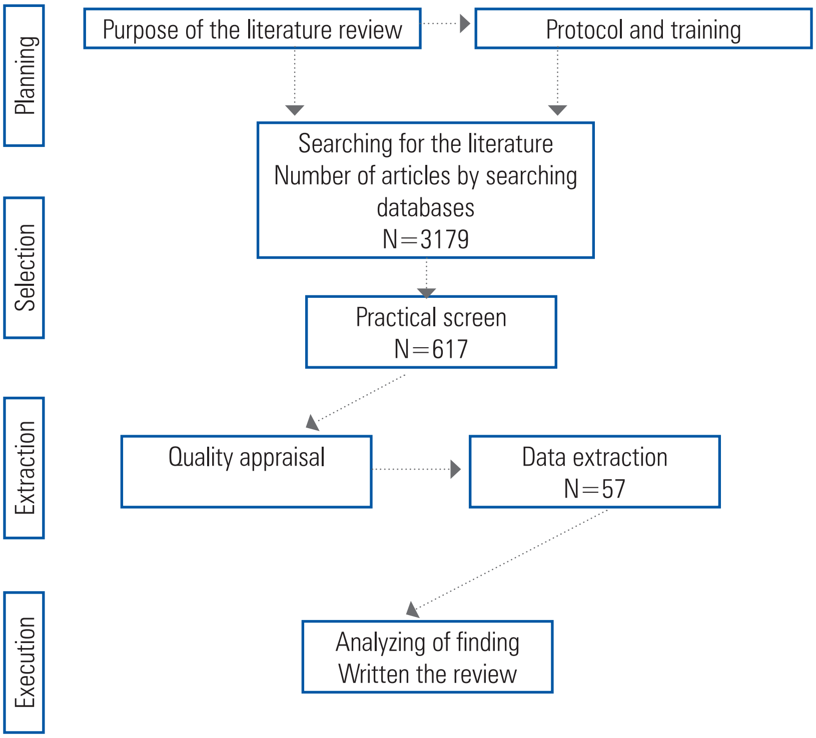
3.6. Data extraction

In order to mine data, a researcher-made checklist was used and information related to the research, including the article's title, the author's name, the year of publication, the type of study, the research objective, crisis factor/effective factor in crisis, and method or solution proposed for crisis management were mined for final assessment and inserted into an EXCEL table. The researcher conducted the search. Ultimately, necessary information for analysis was classified in five tables (Tables 1-5) for final analysis after completing information related to the article's title, year of publication, effective antecedent factors and the relationship between these factors.

3.7. Synthesis of studies

In order to assess the studies effectively and choose the best articles in a critical process to evaluate the quality of research methodology and the obtained results, all articles were reviewed by researchers, based on which the studies were either used in the systematic review or excluded. The selected articles were processed by ENDNOTE.

Figure1: research method



3.8. Writing the review

The search and selection strategy of research is illustrated in figure 1 and to be reported in adequate detail that the results of the review can be separately replicated. The findings were presented in five sections and a conceptual model in the conclusion. Finally, three professors who had carried out at least 10 research studies on commercialization and contributed to 3 relevant research projects were received final draft and validate the dimensions, components and model.

4. DATA ANALYSIS

In the following table, the subject mentioned in previous studies have been categorized into five main groups: organizational, individual, institutional, contextual, and environmental. In the case of organizational subject and components, as table 1 shows, many organizational researchers intend to combine the economic models of scientific discoveries with factors pertaining to organizational success.

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Markman et al. (2005) reviewed the significance of organizational structure and concluded that the most attractive combinations of technology stage and licensing strategy for new venture creation-early-stage technology and licensing for equity-are least likely to be favored by the university (due to risk aversion and a focus on short-run revenue maximization) and will even lower the likelihood of its application. That is explained by the fact that universities and TTOs focus on liquidity maximization in the short-term and seriously avert financial and legal risks.

Lockett et al. (2003) realized that universities with most spinoffs have transparent and precise strategies about the formation and management of spinoff companies. Such universities prefer to hire second-degree (external) entrepreneurs rather than academic entrepreneurs for process management. Furthermore, it seems that more successful universities have more specialties and larger social networks, which help them launch new spinoff companies. However, the role of academic inventors is not significant enough when it comes to the accomplishments of more successful and unsuccessful universities. Furthermore, spinoff company staff at more successful universities had bigger assets.

Lockett & Wright (2005) have highlighted the existence of sufficient experience and skill at universities that used to be in fully non-commercial environments as the source of capability for gaining revenue from spinoff companies. They insist that separating the role of the input sources of universities from everyday trends in their capabilities is instrumental in creating spinoff companies. They also found that both the number of spinoff companies created and those created with equity investment are positively correlated with the expenditure on intellectual property protection, the business development capabilities of Technology Transfer offices and the number of years these offices were active in the field.

Markman et al. (2005) developed a model indicating that for-profit University Technology Transfer Offices (UTTO) structures and licensing in exchange for equity are most positively related to new venture formation, but licensing for cash is the most common strategy used to transfer technologies. Although licensing for equity is more likely to drive new venture emergence, the UTTO motivation to maximize cash flows and minimize financial and legal risks often leads to a strategic choice that does not support new venture creation.

Table 1: Organizational subject and components affecting the knowledge Commercialization

Subject	Component	Previous Studies
Organizational	Supportive Structures (Incubators, science and technology park), Processes of Supportive Structures, Employees, Rights and Rewards for employees)	(Bali & Zarea, 2018; Ensley & Hmieleski, 2005; R. A. Jensen et al., 2003; Lockett & Wright, 2005; Rothaermel & Thursby, 2005; Thompson et al., 2018)
	Structure (Complexity, Formality, Control)	(Boehm & Hogan, 2013; Markman et al., 2004; Markman, Phan, et al., 2005; Moray & Clarysse, 2005; Su & Zarea, 2020)
	Process (Speed up the process of commercialization of research, Formulation and process design and Commercialization standards)	(Baldini et al., 2006; Markman et al., 2005)
	Strategy, Mission, Vision, Goals, Policy	(Bercovitz & Feldman, 2006; Breznitz et al., 2008; Friedrichsen et al., 2017; Lockett et al., 2003; Siegel et al., 2004)
	Revenues from the Commercialization	(Hohenberg & Homburg, 2019; Powers & McDougall, 2005; Read, 2004; Wright et al., 2007)
	University Resources (Assigned Revenue Budget for the Commercialization of Research, Technical Support, Physical Infrastructure, Communications)	(Lauzikas et al., 2016; Phan & Siegel, 2006; Wright et al., 2006)
	Organizational Incentives (Commercialization Revenue Split between the Research Team and University, System of Credit and Promotion)	(Debackere & Veugelers, 2005; di Gregorio & Shane, 2003; Leisyte, 2011; Lim et al., 2017; Markman et al., 2004; Markman, Gianiodis, et al., 2005)

In the case of institutional subject and components, qualitatively analyzing five European universities excelling in technology transfer, Clark (1998) concluded that entrepreneurial norms, standards, and culture contribute to academic entrepreneurship and enhance commercial activities in academic studies. Therefore, institutions' factors play the greatest role in forming entrepreneurial universities. Table 2 presents the discussed subjects and components drafted through the institutional approach.

Moray & Clarysse (2005) maintain that an institutional view for launching university spinoffs in rapid succession poses a risk to research commercialization. The main question they pose is to know if resource endowment to science-based entrepreneurial companies during budget allocation would be affected by the method of Technology Transfer by parent companies. They insist on the point

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that any change in the internal structure of the organization (and particularly in the technology transfer policy) would result in a general change in the method of resource endowment to science-based entrepreneurial agencies. In portraying significant changes in the organization in terms of Technology Transfer policy, they identified three generations of companies and also showed the specificities of resources during the budgeting process.

Degroof & Roberts (2004) examined the significance of university policies regarding establishment of spinoffs in the area where environmental factors (like Technology Transfer and entrepreneurial infrastructure) are not favorable to entrepreneurial activities. They have classified spinoff policies under four categories: absence of policies to launch new companies, minimum activity for the purpose of launch and minimum supporting policy, medium activity for the purpose of launch and medium supporting policy and finally all-out activity for launch and maximum supporting policy in favor of companies. They concluded that formulation of supportive policies by universities at a higher pace may be helpful given the impact they have on the possible growth of ventures.

Table 2: Institutional subject and components affecting knowledge commercialization

Subject	Components	Previous Studies
Institutional	Culture and Behavior	(Bercovitz & Feldman, 2006; Clark, 1998; Franklin et al., 2001; Hohenberg & Homburg, 2019; Mustar et al., 2006; Siegel et al., 2003)
	Norms for the Protection of Products and New Technologies and Intellectual Property Protection Legislation	(Bercovitz & Feldman, 2006; Ensley & Hmieleski, 2005; Louis et al., 1989)
	Rules and Regulations for the Protection of Products and New Technologies and Intellectual Property Protection Legislation	(Bercouitz et al., 2001; Yadoolahi Farsi et al., 2011; Lim et al., 2017; Link & Scott, 2017; Markman, Gianiodis, et al., 2005)

In the case of individual subject and components, given the fact that the success of academic technology commercialization depends on individual intentions (i.e., risk-taking and academic entrepreneurs' skills), it is imperative to bring the individual analysis level into account to draft a more comprehensive model to facilitate an effective technology transference (Emami & Klein, 2020; Ismail & Sidek, 2019). In Table 3, the individual factors affecting the commercialization function of academic studies have been presented.

Markman et al. (2004) analyzed bioscience faculty members' interest in engaging in various aspects of Technology Transfer like commercialization and studied the individual aspects and characteristics. They insist that regional groups' norms can largely impact commercialization of university research, regardless of the form and structure of the university.

Vohora et al. (2002) concluded that university spinoffs should go through regular steps in order to become successful. For them, academic entrepreneurship is a nonlinear iterative process that passes through several key nodes. Specific barriers or junctures are also identified that must be overcome in order to move from one stage to the next: opportunity recognition, entrepreneurial commitment, threshold of credibility and threshold of sustainability.

Table 3: Individual subject and components affecting knowledge commercialization

Subject	Component	Previous Studies
Individual	Age	(D. Audretsch et al., 2003; D. B. Audretsch et al., 2017; Baldini et al., 2006; Boehm & Hogan, 2013; Thompson et al., 2018)
	Commercialization of education and skills	(Chang et al., 2009; Lim et al., 2017)
	Experiences and Skills of Research Commercialization, Quality of Professor in University, Specialization	(R. A. Jensen et al., 2003; R. Jensen & Thursby, 2001; Mustar et al., 2006; Thompson et al., 2018)
	Access time	(Chang et al., 2009; Do, 2014; Friedrichsen et al., 2017)
	Characteristics of Entrepreneurs (Proactiveness, Risk-Taking, Dissatisfaction of Work, Motivation, Commitment)	(Leisyte, 2011; Mustar et al., 2006; Vohora et al., 2002; Zucker & Darby, 2001)

In the case of contextual subject and components, Nicolaou & Birley (2003) see social networks of university entrepreneurs as determinants of university spinoffs. For them, social networks of entrepreneurs including communications with venture capitalists, colleagues and researcher's personal communications as instrumental in the commercialization of university research.

Link & Scott (2005) investigated the conditions when a research joint venture (RJV) will involve a university as a research partner. They hypothesized that larger RJVs are more likely to invite a university to join the venture as a research partner than smaller RJVs because larger ventures are less likely to expect substantial additional appropriability problems to result because of the addition of a university partner and because the larger ventures have both a lower marginal cost and a higher marginal value from university R&D contributions to the ventures' innovative output.

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Table 4: Contextual subject and components affecting knowledge commercialization

Subject	Component	Previous Studies
Contextual	University Context (History and Traditions of the University), University of Abilities and Capabilities	(Bercovitz & Feldman, 2006; Lauzikas et al., 2016; Link & Scott, 2017; O'Shea et al., 2005)
	Networks Within and Outside the University, Professor of University Active in the Industrial Sector, Industrial Relations, Business Partners, Proactive Companies in other Industries, Government Companies, Competitors, and Experts Outside the Company	(Lim et al., 2017; Rothaermel & Thursby, 2005; Zucker & Darby, 2001)

In the case of environmental subject and components, Siegel et al. (2003) realized the inconsistency between the motivational system of faculty members and the objectives of commercialization of Technology Transfer at universities. This inconsistency covered both cash and non-cash rewards like credit for professorship and promotion. They developed a model of productivity for 113 TTOs. In their model, licensing activity is treated as the output and invention disclosures, full-time equivalent employees in the TTO, and legal expenditures are considered to be inputs.

Link & Scott (2017) found that the university royalty distribution formula determining the fraction of the licensing revenue that is allocated to the faculty member who developed the new technology. It may also lead to development of technology licensing. However, they make a distinction between this issue and the formation of new companies.

Ensley & Hmieleski (2005) studied the difference between high-technology university-based and independent start-ups in order to draw definitive conclusions worthy of use toward informing university business incubator and technology park related policy. In so doing, they adopted the view that university-based firms will institutionalize themselves toward the norms of the university and the successful ventures that have been launched through their nurturing, rather than toward their own industry. To that end, they painted a picture of what the term "localized" isomorphic behavior.

Audretsch et al. (2017) see the startup's choice of location as a strategy for benefiting from the knowledge spillover at universities. They say that proximity to universities is subject to various mechanisms of knowledge spillover (human research and capital) and various types of knowledge spillover (natural sciences and social sciences). They concluded that knowledge spillover mechanisms and types are all non-homogenous. More importantly they realized that university spinoffs (at least in science and high-tech) are affected by local economic conditions as well as accessibility to knowledge developed by universities.

Table 5: Environmental subject and components affecting knowledge commercialization

Subject	Components	Previous Studies
Environmental	Effects of Collaboration, Cooperation with Scientists Oldest	(Baldini et al., 2006; Bercovitz & Feldman, 2006; Zucker & Darby, 2001)
	Market and Marketing Factors (Identification of Market Opportunities, Good Marketing, Market Pressure)	(Boehm & Hogan, 2013; Siegel et al., 2003; Vohora et al., 2002)
	Geographical Location (Overflow Knowledge)	(D. B. Audretsch et al., 2012; Breznitz et al., 2008; Do, 2014; Zucker & Darby, 2001)
	Campus, Corporate Concentration in One Area, and Their Choice	(Friedrichsen et al., 2017; Hohenberg & Homburg, 2019; Powers & McDougall, 2005)

5. DISCUSSION AND CONCLUSION

Studying knowledge commercialization from various aspects may indicate the complexity of the process and the grounds for the materialization of commercialization. Therefore, commercialization performance has its own complications. For instance, Nicolaou & Birley (2003) and Mustar et al. (2006) have studied social networks of academic entrepreneurs and researchers, but they have not precisely provided an assessment of these networks and they have mainly focused on the significance of social networks and their formation. That is while in the Muir et al. (2005), it has been noted that the high number of measures may lead to disruption in the commercialization system, pushing WG to reduce the number of its initially proposed factors from 40 to 14.

All researchers and institutes have chosen factors based on the circumstances under which the research has been done and studied them within the domain of research. For this reason, each subjects and components are significant and prioritized based on the domain of research. Some scientists have chosen subjects based on the history of the academic value system (Degroof & Roberts, 2004), the technical depth of institution (Phan & Siegel, 2006) while some have factored in cultural circumstances (Clark, 1998) to study relevant components. Of course, numerous researchers have embarked on a comprehensive study of subjects and have either pointed to a single classification or failed to provide any suggestion on the proper use of the components. For instance, Agrawal (2001) has a comprehensive review of the literature of technology transfer between universities and industries. Based on

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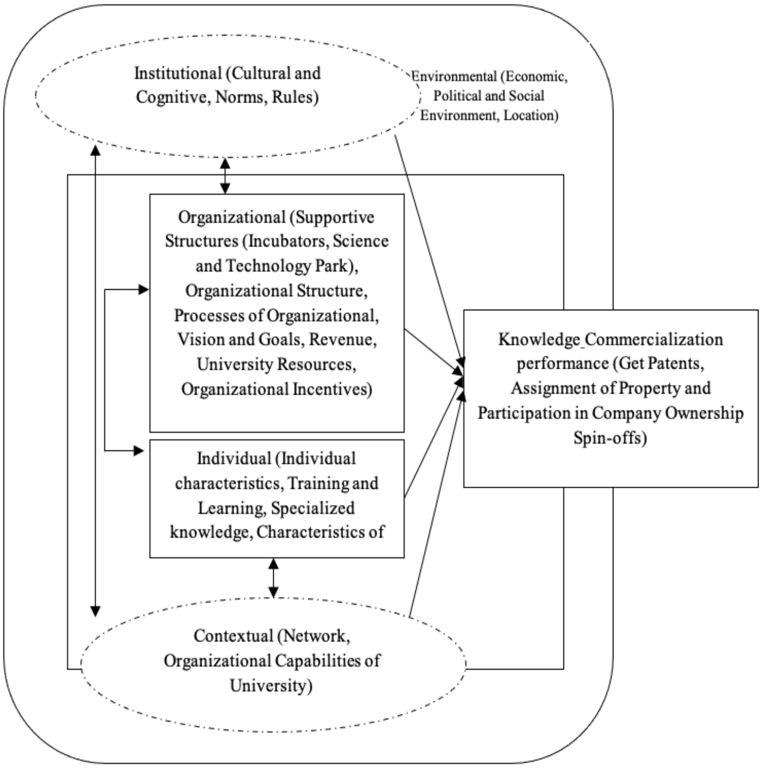
his findings, problem was stated that many of existing criteria naturally cast doubt on the uniqueness and specificity of the route. He dismisses the idea of the components being unsuitable, saying they need to be interpreted correctly. For him, each of these has to be studied within the framework of the stated problem.

In this article, we take into consideration the subject and components cited in the conceptual model research on development of knowledge commercialization performance as shown in figure 2.

The present study expanded contextual, institutional, and environmental factors contributing to the knowledge commercialization, remarkably influence the processes and activities of knowledge commercializing. The review of the related literature and the results of experts interviews reveal that environmental factors can serve as a platform and facilitate other effective factors. It can be concluded that contextual and institutional factors are present inside and outside universities, and scholars and faculty members consider them as instruments for enhancing entrepreneurial behaviors and setting up entrepreneurial universities. For example, many scholars use unofficial networks formed by industries to gain the necessary financial support to fund their research projects. Here, as organizational factors, universities have no effect on the improvement of the commercialization function of academic studies.

Figure 2: Antecedents knowledge Commercialization Conceptual Framework



It should be noted that these factors, including those inside and outside universities, affect the performance commercialization and will fail to yield expected results unless the environmental factors are considered.

As a matter of fact, contextual factors reinforce networks, improve internal interactions of the researchers and faculty members, and boost organizational capabilities. Holding short-term training courses can help improve the researchers' commercialization skills and other capabilities, including marketing, project management and product development.

Finally, it is recommended that policymakers and managers change commercialization policies in relation to encouragement and motivation to synergize the potentials of researchers and faculty members. Failure to modify the current policies would instead lead to researchers' motivation loss and the rejection of more commercialization studies. It is recommended that other researchers test the framework through quantitative methods and factor analysis tools It is also recommended that researchers study technology commercialization.

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AD-minister Nº. 39 july - december 2021 pp. 243 · ISSN 1692-0279 · eISSN 2256-4322

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AD-MINISTER

AD-MINISTER · MEDELLÍN - COLOMBIA
Nº 39 JULY - DECEMBER DE 2021 · PP. 243
ISSN 1692-0279 · E-ISSN: 2256-4322

ISSN 1692-0279
9 771692 027903 >