PRESENTING A SUSTAINABLE HUMAN RESOURCES MODEL IN THE IRANIAN AUTOMOTIVE INDUSTRY USING THE GROUNDED THEORY APPROACH

INTRODUCTION

For a long time, the management process in the business environment focused on achieving short-term financial goals and ignoring long-term goals related to human issues (MALEY, 2014). Furthermore, the exponential growth of human economic development has had a devastating effect on the environment and the world’s natural resources. Meanwhile, participation in social activities to compensate for the damage caused by this situation is very limited (KORTEN, 1998). Recent studies have focused on the effect of the human factor on sustainable development and resource conservation (PFEFFER, 2017).

With an increasing focus on social responsibility and sustainable performance, organizations have set new goals other than mere financial gain, such as commitment to social and environmental consequences (JEURISSEN, 2000). In this regard, it can be stated that public awareness of the social problems and economic environment that can arise within the business scenario helps organizations to show their commitment to sustainability (INERT et al., 2016).

It is noteworthy that there are severe concerns for studies focusing on sustainability and development (LINNENLUECKE & GRIFFITHS, 2010). Although the number of studies has increased in recent years (ROCA & SEARCY, 2012), there are still conceptual shortcomings (LOZANO, 2008). Meanwhile, in the last three decades, the role of human resources for the strategic goals of the organization (KRAMAR, 2014) as well as improving organizational performance, through cost and revenue approaches and evaluating the economic benefits of stakeholders and owners, has been highlighted (JACKSON & SEO, 2010).

Sustainable human resource management was raised in Germany, Switzerland, and Australia in the late 1990s. Currently, research on sustainability for human resource management has been developed by various disciplines and research areas. Such studies focus on corporate sustainability, corporate social responsibility, and sustainable work systems, which offer different perspectives on traditional concepts and strategic human resource management practices in the business environment. Sustainable human resource management has multiple levels of analysis (effects on individuals, process management, organization, and society), dimensions (economic, ecological, social, and human), and different time perspectives (INERT et al., 2013).

In Iran, the automotive industry is the largest industry after the oil industry. A large number of personnel, the diversity of specializations in this industry, and the significant impact of the workforce on the performance of automotive companies indicate that these companies have a great desire to improve the human resource management system for organizational development. Therefore, the present research, with the aim of an accurate analysis of scientific resources and taking into account the fundamental considerations, has identified and prioritized the components of sustainable human resource management affecting the development of the automotive industry. And it answers the main question, what is the model of sustainable human resources in the Iranian automotive sector and its components? And how is the prioritization of this component from the perspective of automotive industry managers?

In the following, first, the theoretical foundations and background of related research will be mentioned. Then, the research method, including the type of research, population, and

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statistical sample, is stated, and finally, after presenting the research findings, conclusion and research suggestions will be provided.

THEORETICAL FOUNDATIONS AND BACKGROUND

In this part of the research, sustainable human resource management is investigated theoretically and based on various existing perspectives, such as stakeholder theory (FREEMAN, 2010), resource-based theory (WERNERFELT, 1984), organizational theory (SCOTT, 1987), paradox theory (VEN, 1989), risk society theory (BECK, 1992, A), organizational development theory (PORRAS and ROBERTSON, 1986), systems theory (BERTALANFFY, 1950) and signaling approach (SPENCE, 1978) and the ability, motivation, and opportunity (AMO) theory (APPLEBAUM et al., 2000). Accordingly, to investigate the theoretical foundations related to the research topic, we summarize some of the most influential ideas related to the relationship between human resource management and sustainability:

According to the stakeholder model, the link between human resource management and sustainability is based on an "open system" approach based on the link and interaction of various factors such as stakeholders, legislators, social and environmental factors (BENN & BOLTON, 2011). In this regard, the foundations of this theory emphasize the importance of social interaction and participation of the actors mentioned above in business. The interactive approach encompasses a wide range of values and activities related to collective concerns and thus justifies the practice of converging procedures between human resource management and sustainability (KRAMAR, 2014). Schuler and Jackson (2005) stated that the stakeholder framework covers both intra-organizational and extra-organizational responsibilities. They pointed out that human resource management strategies should meet the interests of employees and meet the needs of all stakeholders.

The resource-based view (RBV) theory is based on the premise that whenever the human resources department is integrated with sustainable procedures related to the workforce (i.e., participation, motivation, retention, and empowerment), it creates added value for the company in both financial and non-financial areas (GONG et al., 2009). From resource allocation, many researchers consider the resource-based theory as a bridge between human resource management and sustainability because both are directly related to resource-based strategies and management (NEJATI et al., 2017). Based on the resource-based perspective, the development of human abilities and skills and the protection of natural resources are recognized as critical factors in creating a competitive advantage (ARULRAJAH & OPATHA, 2016).

Organizational theory on the operationalization of sustainable human resource management clearly explains how human resource functions are integrated with the organization’s growth and development (maturity) (ARULRAJAH & OPATHA, 2016). This theory validates the implementation of sustainability as a kind of response to external pressures exerted by government and civil society (RUSSO & FOUTS, 1997). According to the organizational approach, the adoption of sustainable human resource management through human resource tasks is performed in two stages, including legitimacy at the corporate level and formalization at the administrative level (ARULRAJAH & OPATHA, 2016). The organizational model is considered an aspect of the good fit between ecosystems and human resource systems that meets intra-organizational and extra-organizational actors (GREENE, 1999). Thus, in systems theory, sustainable human resource management is described as a subsystem that interacts with the environment and society to create credibility and acceptance (JACKSON & SCHULER, 1995). For example, this theory suggests that sustainable human resource management can achieve better performance by retaining employees, developing skills, and strengthening innovative attitudes toward social and environmental issues.

The theory of ability, motivation, and opportunity has been widely used by researchers in human resource management articles that support the relationship between human capital and social, ethical, and ecological performance (OPATHA, 2015). This theory is a multidimensional model that strengthens the company’s sustainable results based on three factors. These three factors are the ability to use and contribute to activities and the desire to cultivate an environmentally friendly environment inside and outside the workplace, and finally, creating an opportunity for employees to adapt to a suitable work environment and organizational support culture that strengthens sustainable attitudes and increases
participation in voluntary activities (OPATHA, 2015; RENWICK et al., 2013). Meanwhile, the theory of ability, motivation, and opportunity (APPELBAUM et al., 2000) clarifies strategies and concepts of human resource functions to promote sustainable performance (development) of the organization (GHOLAMI et al., 2016; GUERCI et al., 2016).

In the following, a summary of studies in the field of sustainable human resource management is provided:

Bombiak & Marciniuk-Kluska (2018), in a study, investigated human resource management as a tool for sustainable company development. The results demonstrated that the higher the evaluation of the impact of a given activity, the more frequent its implementation in the studied companies. This allowed the formulation of the following conclusion: to increase the scope of the performance of the Green HRM concept in young enterprises; it is necessary to raise awareness and disseminate knowledge concerning the impact Green HRM can have on sustainable development in organizations.

In a study, Seyed Abbaszadeh et al. (2016) investigated the development of sustainable human resources: the effects of knowledge management channel and organizational factors. The results showed that organizational factors have a positive, direct, and significant impact on the knowledge management process; Knowledge management process has a positive, immediate and significant effect on human resource development, organizational factors have a positive, direct and consequential impact on human resource development, and organizational factors have an indirect, positive and significant effect on human resource development through the knowledge management process. Therefore, the obtained experimental model was consistent with the conceptual model of the research. The general conclusion indicated the relationship between organizational factors and human resource development with the mediating role of the knowledge management process among Hormozgan Islamic Azad University staff.

In a study, Arman et al. (2016) investigated the effect of social capital and human resource maturity on sustainable human resource management in Iran’s petrochemical industry. Findings showed that social capital and human resource maturity have a positive and significant effect on sustainability. In sub-hypotheses regarding the impact of social capital dimensions on sustainable human resource management, only the effect of substantial relationship capital dimension and the other two dimensions of structural and cognitive capital were ineffective. Also, examining the effects of human resource maturity, corporate image, and individual health positively affect sustainable human resource management. Still, the dimensions of alignment of organizational and personal goals and productivity do not affect sustainable human resource management.

In a study, Tabatabai et al. (2016) provided a sustainable human resource management scorecard in Iranian information and communication technology companies. Through the results of data analysis, the objectives, evaluation criteria, and consequences of sustainable human resource management in each of the functions of human resource management (recruitment, training and development, retention, compensation, and departure of employees) were identified. The present research findings indicate the high potential of sustainable human resource management in improving competitive advantage, organizational sustainability, increasing productivity, and creating a strategic position for organizations.

Tripon (2015), in a study, examined sustainable human and professional development using the creative method EFI ROM. This method can be applied to management and all levels of the management hierarchy with short-term and long-term decision-making responsibilities. This paper has been tested in some innovative projects. This paper presents the improved type related to the characteristics of innovative organizations.

Maleki and Darini (2014) investigated the effect of human resource optimization on sustainable organizational development. Based on the research findings, they concluded that among the effective strategies in sustainable development in which one can hope to increase organizational productivity, one could mention focus on in-service training, professional development, the institutionalization of change and innovation, application of information technology, and focus on deploying performance management systems.
Kargar (2009), in a study, investigated the optimization of human resources as a solution for sustainable development of the organization: an analytical analysis of factors and solutions. The result of this analytical study was to identify solutions to be focused on to institutionalize sustainable development in the organization and in the shadow of it to hope to increase the organization’s productivity. Focus on in-service training, professional development, the institutionalization of change and innovation, application of information technology and focus on the deployment of performance management systems are discussed as five critical factors to achieve the goals mentioned in this article.

A review of the theoretical foundations and research background shows that various theoretical frameworks related to human resource management have been presented in the literature. However, the components affecting the sustainability of human resource management that support organizational development have not been specifically identified and scrutinized in a specific study. Also, the results and consequences related to the issue of sustainability at the employee level have not been studied, and there is still a lack of strategies of human resources to support organizational development, which the present study will take into consideration.

**METHODOLOGY**

The present study is applied in terms of purpose, a descriptive survey in terms of inference method, and exploratory-mixed in terms of data nature. The mixed research method involves collecting, analyzing, and interpreting quantitative and qualitative data in a single study or in a set of studies that study and research a fundamental phenomenon. The reasons for choosing the experimental mixed research method for the present study are 1. It was obtaining more evidence to understand better the phenomenon of sustainable human resource management in the automotive industry; 2. Lack of a comprehensive model of sustainable human resource management (at home and abroad) supports the automotive industry development; 3. The interdisciplinary nature of sustainable human resource management and the development of the automotive industry, and the need to take advantage of the views of experts in various fields.

**Statistical population and sampling method**

The statistical population of this research consisted of all managers and experts in the field of human resources and senior managers of development units of Iran Khodro and Saipa companies. These people are experts in the field of the research topic. The purposive non-probability snowball sampling method was used to select the sample individuals because we purposefully sought out those experts who had the most information about the research topic. In this study, sampling criteria for selecting experts were:

- Having experience in the field of human resource management or at least five years of work experience in this field
- Having a book, dissertation, or at least two authoritative scientific articles in the field of human resources or sustainable development of the automotive industry or having a university education related to the research fields

Due to the sampling method’s nature, the sample size of this study was determined to be 15 people based on available experts willing to cooperate.

**Validity and reliability**

To verify the research stages, the validity of the content of a test is usually determined by experts in the subject under study (DANAEI FARD et al., 2009). Accordingly, after studying the relevant scientific sources, interview questions and questionnaires were initial and performed. The research team (the supervisor, the advisor, and two experts in the automotive industry) was consulted, and they approved the work process and questions.

To determine the reliability, if the interview standards from the design of the question to the situation and copying are observed in conducting the interview, we can be sure of the reliability of the interview (DANAEI FARD et al., 2009). In this research, to achieve the model’s reliability, in-depth interviews to reach the consensus of experts to the saturation stage have been done. Accordingly, the initial analyses of the data gave the interviewees feedback and confirmed that
the studies reflect their assumptions and views. A summary of the findings was also provided to the interviewees, and they established the analyses. All interviewees stated that they had a good understanding of the components of the model.

**RESEARCH METHOD**

Given that in the experimental mixed research method, first qualitative research methods and then quantitative research methods are used, the stages of the present research have been performed as follows:

**The research method of the qualitative section:** In this section, grounded theory was used to collect data and information to analyze the qualitative area. Necessary measures were taken for a qualitative interview with a group of 15 experts and human resources experts in the country’s automotive industry who had sufficient knowledge of the subject. In the qualitative stage of the research, data collection continued until the theoretical saturation of categories and, more precisely, until it was no longer possible to access new data. After conducting the interviews, initial, axial, and selective coding was performed in NVivo Plus 2020 software.

**Research method of the quantitative section:** Considering the purpose and nature of the research subject, the most appropriate method in the quantitative stage for the present study was descriptive-survey research method and, therefore, this method was used to obtain experts’ views on the components of sustainable human resource management affecting the development of the automotive industry. In this part of the research, a researcher-made questionnaire was used to collect quantitative data. The questionnaire was designed based on the five components extracted from the grounded theory process. For quantitative data analysis, the Fuzzy Analytic Hierarchy Process (FAHP) method was used to prioritize the components of sustainable human resource management affecting the development of the automotive industry. The analytic hierarchy process is a way to break down a complex situation into its parts and arrange these parts or variables according to the hierarchical order:

Step 1. Creating pairwise comparison tables and answering based on the following spectrum:

In this step, like the AHP method, pairwise comparisons must be created, and these pairwise comparisons must be answered based on the following fuzzy spectrum. This 9-digit spectrum is fuzzy AHP. However, 5-digit or 7-digit spectra can be used, but this 9-digit spectrum is a standard spectrum.

\[
A = [a_{ij}] \quad \rightarrow \quad i, j = 1, 2, ..., n
\]

\[
\forall i, j, k = 1, ..., n : \quad a_{ii} = a_{ik} \times a_{kj}
\]

Step 2. Calculating the inconsistency rate of pairwise comparisons:

In this step, the inconsistency rate of pairwise comparisons must be checked, and if this rate is less than 0.1, it means that the pairwise comparison has appropriate stability and consistency.

Whenever the transitive condition is met in the matrix of pairwise comparisons, i.e., we have for all the entries of matrix A:

The matrix is then called consistent. The consistent matrix is shown with \( A_c \). In general, suppose \( w_1, w_2, ..., w_n \) contains \( n \) preset weights for the criteria. In this case, the constant matrix is defined according to the transitive condition as follows:

\[
W = \begin{bmatrix}
w_1 & w_1 & \cdots & w_1 \\
w_1 & w_2 & \cdots & w_n \\
w_2 & w_2 & \cdots & w_1 \\
\vdots & \vdots & \ddots & \vdots \\
w_n & w_n & \cdots & w_n \\
w_1 & w_2 & \cdots & w_n
\end{bmatrix}
\]
Thus, if $A$ is a consistent matrix, then for every $i$ and $j$, we have: $a_{ij} = w_i/w_j$

If the transitive condition is not met for all entries, then the matrix is inconsistent, and the inconsistency rate can be calculated by a measure called the inconsistency rate. Since consistency and inconsistency are important in multifunctional issues, the existence of a technique that can comment on the texture and inconsistency of any decision is of great importance. One of the essential advantages of the analytic hierarchy process is the measurement and control of the consistency of each matrix and decision. In other words, in the analytical hierarchy process, one can always calculate the degree of the character of the decision and judge whether it is good or bad, acceptable, or rejected.

Step 3. Integration of pairwise comparisons:

When multiple respondents have responded to pairwise comparisons, the geometric mean method is used to integrate them to obtain an integrated pairwise comparison matrix. The integration of fuzzy matrices is such that a geometric mean is taken from the first entries of all comparisons, a geometric mean is taken from the second entry, and a geometric mean is taken from the third entry.

Step 4. Calculating the weights by Chang’s development analysis method:

First, based on the following equation, we obtain the values of $S_i$ for each row of the fuzzy pairwise comparison matrix.

$$S_i = \sum_{j=1}^{m} M^i_{gj} \otimes \left[ \sum_{j=1}^{n} \sum_{j=1}^{m} M^j_{gj} \right]^{-1}$$  \hspace{1cm} (2)

Then, based on the following equation, we obtain the magnitude (degree of preference) of each $S_i$ and $S_k$.

$$V(S_i > S_k) = \begin{cases} 1 & M_i \geq M_k \\ 0 & l_k \geq u_i \\ \frac{l_k - u_i}{(m_i - u_i) - (m_k - l_k)} & (m_i - u_i) - (m_k - l_k) \\ \end{cases}$$  \hspace{1cm} (3)

In the last step, the raw weights are calculated using the following equation that the standard weight is obtained by dividing each natural weight by the total basic weights.

$$V(S \geq S_1, S_2, ..., S_k) = V(S \geq S_1, S \geq S_2, ..., S \geq S_k)$$
$$= \min \left( V(S \geq S_1, S \geq S_2, ..., S \geq S_k) \right)$$  \hspace{1cm} (4)
$$= \min V(S \geq S_i) \text{ for } i = 1, 2, ..., k$$

**FINDINGS**

In this section, the findings obtained from the collection and analysis of data and information are reviewed and analyzed separately for each of the research questions:
1. What is the model of sustainable human resources in Iran’s automotive industry, and what are its components?

As mentioned in the research methodology section, after a comprehensive review of theoretical and experimental foundations, semi-structured interviews and a grounded theory approach were used to identify the components of sustainable human resource management affecting the development of the automotive industry in the qualitative part of the research. For this purpose, the following stages were performed:

- One week before the interviews, the research proposal and a summary of the theoretical and experimental background were explained to the research team (the supervisor, the advisor, and two experts in the automotive industry). They were then asked to state their comments.
- To collect the data obtained from the interview, first, the interview form was designed. To record people’s views, notes were taken, and conversations were recorded.
- The initial analyses of the data gave feedback to the interviewees, and they confirmed that the comments reflect their assumptions and views.
- After collecting the data obtained from the interviews, analyzing and summarizing the qualitative data began. These data were summarized and coded according to the grounded theory method. Thus, after conducting the interviews, the discussions were coded in three levels of initial, axial, and selective. In the first stage, coding is considered as initial coding due to its generality and openness. In the following set of this type of coding, secondary coding was performed. The initial codes became a concept code due to many similar classes or the same secondary principles. During the open coding, approximately 129 items were obtained as initial concepts from the text of the interviews, which were classified into 20 sub-indicators and five dimensions.
- A summary of the findings was provided to the interviewees, and they approved the analyses. All interviewees stated that they had a good understanding of its components and components.

The following are the results of this part of the research in Table (1):

| Table 1. Analysis of interviews |
|--------------------------------|
| **Main categories** | **Axial coding (components)** | **Open coding (numbers in parentheses indicate repetition of concepts)** |
| Causal conditions | Economic conditions | Increase in production costs (9), company financial growth (11), productivity (12), social and economic welfare of employees (7), the livelihood of employees (13), inflation (7), recession (9), unemployment (8) |
| | Social conditions | Promoting the social health of employees in the organization (10), hostile and militant relations between employees and employers (6), adopting ethical processes for human resource management (4), fostering a perception of procedural and distributive justice in the organization (5), ethical problems among employees (9), internal communication to strengthen the stability of the company (7), differences in individual and group behavior and attitudes and social expectations of the workforce according to the level of university education (11) |
| | Environmental conditions | Promoting environmental issues in the automotive industry (4), poverty and lack of environmental protection regulations (3), promoting environmental sustainability in the organizational context, green human resource management (7), improving environmental sustainability in the automotive industry (8), strict implementation of national standards in terms of pollution and environment in manufactured products (15), environmental management programs and their integration into the activities of the organization (9) |
| Contextual conditions | Recruiting and retaining workforce | Maintaining employment (7), avoiding dismissal of employees (10), appreciating the experiences and contribution of employees in organizational development (13), formulating criteria for sustainable human resource competency (5), recruitment based on sustainable human resource competency (9) |
| | Training and developing skills of employees | Training and promotion of registration changes in the work process (11), training and development programs for employees (12), continuous training and development of technical skills (13), training using various methods, in person, online (7), participation and training of employees in With sustainable human resources (4), use of technological tools in the process of training and development (13) |
| | Maintaining the health and efficiency of employees | Mental and social health of employees (7), distribution of health items on the production line (15), maintaining health and reducing the infection of employees with coronavirus by preventing unnecessary gatherings (14), organization’s support for employees (6), preference to retain skilled workforce over recruitment |
### Interventionist conditions

| Stakeholder/Role | Description |
|------------------|-------------|
| Employees        | Human factor as the most critical part of the transformation and development of the automotive industry (5), excellence and sustainable development of the automotive industry in the shadow of improving human resources (5), extensive labor market (7), skills and talents of employees (6) |
| Investors        | Shareholder interests (9), shareholder expectations (10), securing the interests of internal and external investors of the company (6), investors’ priorities about organizational performance (10), participation of investors in the development of sustainable human resources (4) |
| Supplier         | Involvement and influence of some specific suppliers (4), receiving information from the parts supply market (7), establishing effective relationships with suppliers to ensure sustainable human resource policy (8), control of suppliers (10), quality development of suppliers, and performance rewards (14) |
| Government       | New and strict laws (15), obligation to implement all government labor laws (14), explanation of short-term and long-term policies in the automotive industry (8), policy-making and communication of guidelines (6), compliance with government regulations affecting the performance of sustainable human resources (7) |
| Community        | Society being demanding (12), training of efficient human resources to start activities in the automotive industry (7), increasing demand for social responsibility (4), employee participation in sustainable social activities (5), attention to society’s expectations in the policy-making process of sustainable human resources (10) |
| Customer         | Providing sales and after-sales services in absence (13), holding an extraordinary meeting online (6), distributing health items at dealerships (13), customer tastes and needs (10), customer training (7), customer participation in some sustainable human resource processes (5), customer knowledge management (7), customer satisfaction (15) |

### Strategies

| Strategic Description | Description |
|-----------------------|-------------|
| Organization’s ability to recruit and retain talents | Identifying and enhancing the capabilities of experts (5), attractive and challenging work environment (8), developing methods to reward employee performance (9), maintaining and developing the skills of experts (5), designing an optimal service compensation system (5), developing capabilities and managing talents (4), identifying key positions and recruitment for the elite (6) |
| The necessity to employ a healthy and motivated workforce | Promoting health and safety in the workplace (9), preventing or reducing job stress (10), an adequate force for activities (7), designing ergonomic working conditions (10), providing a balance between work and personal life (9), mental and social health of employees (4), the importance of motivating employees (4) |
| Investing in employee competencies for current and future scenarios | Identifying current and future capabilities and limitations of employees (4), investing in employee competencies (7), training skills and activities to improve employee capabilities (6), creating training and development opportunities for employee skills (5), determining criteria and indicators of competency assessment (5), investing in the qualifications of employees at the time of employment (9), precise job design and specialized requirements of employees (11) |
| Financial benefits and economic growth | Creating relative welfare for employees (7), financial and economic growth of employees (7), increasing employee motivation (7), increasing employee satisfaction (7), desirable work and profitability (7) |
| Responsibility and social awareness | Corporate social responsibility (11), avoidance of harmful side effects on society or the environment (9), organizational maturity and identification with the community (6), participation in social activities and social popularity (4), formulation of a program to develop a culture of employee social participation (6), creating a collectivist identity (4), formulating the social values of employees to develop the automotive industry (10) |
| Employees with green values | Employees’ respect for the environment (12), design and production of green products by employees (14), development of green values in the field of sustainable human resources for the development of the automotive industry (10), reduction of waste production by employees in the production chain (12), promotion of employees’ green behavior (8), environmentally friendly behavior (5), high responsibility of employees towards the environment (9), voluntary green behaviors (4), the realization of competitive environmental advantage (12) |
| Convergence of measures for development | Innovative approach in the field of management (3), development of attitudes and behaviors consistent with a sustainable method (9), the efficiency of processes (12), employee participation in sustainable industry development (7), formulation of sustainable human resource competency criteria for the development of automotive industry (8), optimization of resources and reduction of energy waste in manufactured products (8), convergence of individual and organizational values for development (5) |
| Reducing inequality at work | Sustainable workplace for employees (5), equal opportunities in career advancement (7), democracy in the workplace and employee participation (7), increased motivation (11), purposeful job satisfaction (6), earning income commensurate with the level of efficiency and effectiveness of employees (9), implementation of welfare and health programs for employees tailored to individual needs in different occupational groups (11), reduction of inequality and discrimination in activities of employees (13) |

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**Source:** Search data

Finally, the model of sustainable human resources in the Iranian automotive industry, in the form of a paradigm model, is presented in Figure (1):
What is the degree of importance of sustainable human resource management components affecting the development of the automotive industry?

To calculate the importance of each of the sustainable human resource management components affecting the development of the automotive industry and determine the weight of each element in the five dimensions (causal conditions, contextual conditions, interventionist conditions, strategies, and outcomes and consequences) based on the fuzzy analytic hierarchy process (FHAP) method, first, we obtained the geometric mean of scores of pairwise comparisons for the components in each of the five dimensions based on the views of senior managers and development experts of Iran Khodro and Saipa companies. Then through the steps stated in the research method, the degree of importance of the components was calculated, the results of which are shown in Tables (2 to 6):

**Figure 1.** The final model of the research

![Figure 1](image-url)

**Source:** Search data.

According to Table (2), economic conditions have the highest priority among the factors, followed by social conditions and environmental conditions in the following ranks.
In the following, we will perform a pairwise comparison of contextual conditions and calculate the importance of these factors. The results of comparing contextual conditions and determining their degree of importance are as follows:

**Table 3.** Pairwise comparison and determining the degree of importance of contextual conditions

| Contextual conditions | Recruitment and retention of the workforce | Training and development of employees’ skills | Maintaining health and efficiency of employees |
|-----------------------|-------------------------------------------|---------------------------------------------|-----------------------------------------------|
| Recruitment and retention of manpower | 1 | 1 | 1 | 0.917 | 1.141 | 1.382 | 0.803 | 1.149 | 1.552 |
| Training and development of employees’ skills | 0.724 | 0.876 | 1.091 | 1 | 1 | 1 | 0.621 | 0.812 | 1.158 |
| Maintaining health and efficiency of employees | 0.644 | 0.871 | 1.246 | 0.864 | 1.231 | 1.610 | 1 | 1 | 1 |

The fuzzy sum of each row

| Fuzzy compound expansion | Degree of preference of Si over Sk | Degree of preference | Normalization of preferences |
|--------------------------|----------------------------------|----------------------|-----------------------------|
| 2.720 | 3.290 | 3.934 | 0.246 | 0.362 | 0.519 | 1 | 1 | 1 | 0.376 |
| 2.345 | 2.689 | 3.248 | 0.212 | 0.296 | 0.429 | 0.734 | 0.816 | 0.734 | 0.276 |
| 2.508 | 3.102 | 3.855 | 0.227 | 0.342 | 0.509 | 0.927 | 1 | 0.927 | 0.348 |

**Inconsistency rate**

\[ CRm = 0.005 \]
\[ CRg = 0.007 \]

It is consistent. (The validity of the respondents’ answers is confirmed)

**Source:** Search data.

According to Table (3), the recruitment and retention of the workforce have the highest priority among the sub-criteria of contextual conditions, followed by maintaining the health and efficiency of employees and training and developing employees’ skills in the following ranks.

The results of comparing the interventionist conditions and determining their degree of importance are as follows:

**Table 4.** Comparing and contrasting the degree of importance of interventionist conditions

| Interventionist conditions | Employees | Investors | Suppliers | Government | Community | Customer |
|---------------------------|-----------|-----------|-----------|------------|-----------|----------|
| Government | 1 | 1 | 1.000 | 1.866 | 2.688 | 1.023 | 1.292 | 1.587 | 0.803 | 1.122 | 1.496 | 1.10 | 1.39 | 1.70 | 0.67 | 0.89 | 1.25 |
| Investors | 0.372 | 0.536 | 1.000 | 1 | 1 | 1.956 | 1.176 | 1.399 | 0.527 | 0.635 | 0.794 | 0.80 | 0.115 | 1.55 | 0.86 | 1.23 | 1.61 |
| Suppliers | 0.630 | 0.774 | 0.977 | 0.715 | 0.850 | 1.046 | 1 | 1 | 1.003 | 1.122 | 1.496 | 1.02 | 1.29 | 1.59 | 0.80 | 1.12 | 1.50 |
| Employees | 0.668 | 0.891 | 1.246 | 1.260 | 1.574 | 1.899 | 0.668 | 0.891 | 1.246 | 1 | 1 | 1.03 | 1.31 | 1.62 | 0.80 | 1.12 | 1.50 |
| Community | 0.588 | 0.719 | 0.912 | 0.644 | 0.871 | 1.246 | 0.630 | 0.774 | 0.977 | 0.630 | 0.774 | 0.977 | 1 | 1 | 1 | 1.023 | 1.292 | 1.587 |
| Customer | 0.803 | 1.122 | 1.496 | 0.621 | 0.812 | 1.158 | 0.688 | 0.891 | 1.246 | 0.668 | 0.891 | 1.246 | 0.630 | 0.774 | 0.977 | 1 | 1 | 1 |

**Inconsistency rate**

\[ CRm = 0.017 \]
\[ CRg = 0.041 \]

It is consistent. (The validity of the respondents’ answers is confirmed)

**Source:** Search data.

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According to Table (4), the sub-criterion of government has the highest priority among the sub-criteria of the interventionist conditions, followed by employees, suppliers, investors, customers, and community in the following ranks.

The results of comparing strategies and determining their degree of importance to each other are as follows:

**Table 5.** Pairwise comparison and determining the degree of importance of strategies

| Strategies                                      | Organization's ability to recruit and retain talents | The necessity to employ a healthy and motivated workforce | Investing in employee competencies for current and future scenarios |
|--------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------|
| Organization’s ability to recruit and retain talents | 1                                                   | 1                                                      | 1.140                                                             |
| The necessity to employ a healthy and motivated workforce | 0.725                                               | 1                                                      | 1.145                                                             |
| Investing in employee competencies for current and future scenarios | 1.122                                               | 0.874                                                  | 1.145                                                             |

The fuzzy sum of each row | Fuzzy compound expansion | Degree of preference of Si over Sk | Degree of preference | Normalization of preferences |
|--------------------------|--------------------------|-----------------------------------|----------------------|-----------------------------|
| 2.336                    | 2.743 3.271              | 0.201                             | 0.295 0.426          | 0.975 0.595 0.273           |
| 2.355                    | 2.751 3.204              | 0.203                             | 0.296 0.417          | 1 0.584 0.584 0.268         |
| 2.996                    | 3.802 5.138              | 0.258                             | 0.409 0.668          | 1 1 1 0.459                  |

Inconsistency rate

| CRm | CRg |
|-----|-----|
| 0.029 | 0.076 |

It is consistent. (The validity of the respondents’ answers is confirmed)

**Source:** Search data.

According to Table (5), the sub-criterion of investing in employee competence for current and future scenarios has the highest priority among strategies followed by the organization’s ability to recruit and retain talents and the necessity to employ a healthy and motivated workforce in the following ranks. Results of the comparison of outcomes and consequences and determining their degree of importance to each other is as follows:

**Table 6.** Pairwise comparison and determining the significance of results and consequences

| Outcomes and consequences                                      | Financial benefits and economic growth | Responsibility and social awareness | Employees with green values | Convergence of measures for development | Reducing inequality at work |
|----------------------------------------------------------------|---------------------------------------|------------------------------------|-----------------------------|----------------------------------------|----------------------------|
| Financial benefits and economic growth                        | 1                                     | 1                                  | 1                           | 1                                       | 1                          |
| Responsibility and social awareness                            | 0.372                                 | 1                                  | 1                           | 1                                       | 1                          |
| Employees with green values                                    | 0.588                                 | 0.719                              | 0.912                       | 0.588                                   | 0.719                      |
| Convergence of measures for development                        | 0.668                                 | 0.891                              | 1.246                       | 1.260                                   | 1.574                      |
| Reducing inequality at work                                     | 0.630                                 | 0.774                              | 0.977                       | 0.871                                   | 1.246                      |
How is the prioritization of each of the sustainable human resource management components affecting the development of the automotive industry?

As answered in the second question of this research, a questionnaire and fuzzy analytic hierarchy process (FAHP) were used to determine the importance of sustainable human resource management components affecting the development of the automotive industry. According to the results, the priority of elements in each of the five dimensions (causal conditions, contextual conditions, interventionist conditions, strategies, and outcomes and consequences) is presented in Table (7):

| Dimensions            | Priority | Components                                      | Degree of importance |
|-----------------------|----------|-------------------------------------------------|----------------------|
| Causal conditions     | 1        | Economic conditions                             | 0.442                |
|                       | 2        | Social conditions                               | 0.305                |
|                       | 3        | Environmental conditions                        | 0.253                |
| Contextual conditions | 1        | Recruitment and retention of the workforce      | 0.376                |
|                       | 2        | Maintaining the health and efficiency of employees | 0.348               |
|                       | 3        | Training and development of employees’ skills   | 0.276                |
| Interventionist       | 1        | Employees                                       | 0.211                |
| conditions            | 2        | Government                                      | 0.188                |
|                       | 3        | Supplier                                        | 0.166                |
|                       | 4        | Investors                                       | 0.153                |
|                       | 5        | Customer                                        | 0.145                |
|                       | 6        | Community                                       | 0.138                |
| Strategies            | 1        | Investing in employee competencies for current and future scenarios | 0.459                |
|                       | 2        | Organization’s ability to recruit and retain talents | 0.273               |
|                       | 3        | The necessity to employ a healthy and motivated workforce | 0.268               |
| Outcomes and         | 1        | Financial benefits and economic growth         | 0.276                |
| consequences          | 2        | Convergence of measures for development         | 0.237                |
|                       | 3        | Responsibility and social awareness             | 0.195                |
|                       | 4        | Reducing inequality at work                     | 0.152                |
|                       | 5        | Employees with green values                     | 0.141                |

Source: Search data.

CONCLUSION AND SUGGESTIONS

The present research aimed to identify and prioritize the components of sustainable human resource management affecting the development of the automotive industry. Accordingly, using the grounded theory method and the analysis of the interviews, during open coding,
approximately 129 items were extracted as initial concepts from the text of the interviews, which were classified into 20 indicators and five dimensions. Finally, using the fuzzy analytic hierarchy process, it prioritized the components of sustainable human resource management affecting the development of the automotive industry.

- The first category of paradigmatic dimensions of the present study is causal conditions. Causal conditions are events that create situations, topics, and issues related to the phenomenon and explain why and how individuals and groups engage in the spectacle. Causal conditions refer to events and happenings that affect this phenomenon and lead to its occurrence. According to the research results, economic conditions have the highest priority among causal factors. From the perspective of human resources experts and senior development managers of Iran Khodro and Saipa, rising production costs, corporate financial growth, productivity, employee social and economic well-being, employee livelihoods, inflation, recession, and unemployment are the factors affecting the economic conditions.

- The second category of paradigmatic dimensions of the present research is contextual conditions. Contextual conditions are the conditions under which strategies and actions manage the phenomenon. According to the research results, recruitment and retention of the workforce have the highest priority among the contextual factors. According to human resources experts as well as senior development managers of Iran Khodro and Saipa, maintaining employment, avoiding dismissal of employees, appreciating the experiences and contribution of employees in organizational development, formulating criteria for sustainable human resource competency and recruitment based on sustainable human competency competence are some of the factors related to the contextual conditions affecting sustainable human resource management to develop the automotive industry.

- The third category of paradigmatic dimensions of the present study is interventionist conditions. Interventionist conditions are broad and general conditions that act as facilitators or limiters of strategies. These conditions facilitate and accelerate the implementation of the system and, as an obstacle, delay them. According to the research results, the government has the highest priority among the interventionist factors. Factors such as new and strict laws, the obligation to implement all government labor laws, the explanation of short-term and long-term policies in the automotive industry, policy-making and communication of guidelines, and compliance with government regulations affecting the performance of sustainable human resources are among interventionist measures of the government affecting sustainable human resource management to develop the automotive industry.

- Strategies is another category that forms the fourth dimension of the paradigmatic dimensions of the present study. Specific actions or interactions that result from the central phenomenon of the research (sustainable human resource management affecting the development of the automotive industry). Strategies and actions are plans and actions that help design a model. According to the research results, investing in employee competence for current and future scenarios has the highest priority among strategies. Factors such as identifying current and future capabilities and limitations of employees, investing in employees’ competencies, training skills and activities to improve employees’ abilities, creating opportunities for training and developing employees’ skills, determining criteria and indicators of competency assessment, investing in employees’ competencies at the time of employment, and precise job design and specialized requirements of employees are among the strategies affecting sustainable human resource management to develop the automotive industry.

- The last category of paradigmatic dimensions of the present study is outcomes and consequences. According to the research results, financial benefits and economic growth have the highest priority among outcomes and impacts. According to the views of experts in the field of human resources as well as senior development managers of Iran Khodro and Saipa, creating relative well-being for employees, financial and economic growth of
employees, increasing employee motivation, increasing employee satisfaction, and desirable work and profitability are among the outcomes and consequences that sustainable human resource management has to develop the automotive industry.

Given the issues raised in the research and considering that economic conditions have the highest priority among causal factors, recruiting and retaining workforce has the highest priority among the contextual conditions, the government has the highest priority among the interventionist conditions, investing in employee competency for current and future scenarios has the highest priority among strategies, and financial benefits and economic growth has the highest priority among outcomes and consequences, it is suggested that to achieve sustainability in human resource management, the infrastructure and work systems of the automotive industry be adapted at the economic, social and environmental levels and that the sustainability of long-term tactics is provided for more or less qualified experts. The automotive industry should promote organizational learning and continuously improve the rank of its employees, and even during crises, emphasize the importance of permanent employee competency. The automotive industry should put employee participation at the top of its plan to increase its skills. The industry also needs to develop procedures that balance employees’ personal and professional lives by monitoring and controlling daily working hours.

REFERENCES

DANAEI FARD, H.; ALWANI, M.; AZAR, A. Qualitative research methodology in management: a comprehensive approach. Esheiqi, Saffar. 2019, 9(8), p134.

SEYED AABBASZADEH, MM.; HASSANI, M.; BAZARGAN, A.; NAMI, K. Sustainable human resource development: the effects of knowledge management channel and organizational factors. Islamic Azad University, Marvdasht Branch, 2018, 9 (34), 1-22.

MALEKI, A; DARINI, M. The Impact of Human Resource Optimization on Sustainable Organizational Development (Vol. 1, p. 8). Paper presented at the International Management Conference. 2014.

APPELBAUM, E.; BAILEY, T.; BERG, P.; KALLEBERG, AL; BAILEY, T. Manufacturing advantage: Why high-performance work systems pay off. Cornell University Press. 2000.

ARULAJAH, A.; OPATHA, H.H.D. Analytical and Theoretical Perspectives on Green Human Resource Management: A Simplified Underpinning. International Business Research, 2016. 9(12), p153.

BECK, U; LASH, S.; WYNNE, B. Risk society: Towards a new modernity 1992, (Vol. 17). sage.

BENN, S.; BOLTON, D. Key concepts in corporate social responsibility. Sage. 2011.

FREEMAN, R Edward. Strategic management: A stakeholder approach. Cambridge university press. 2010.

GONG, K.; YAPING; L.; KENNETH S; CHANG, S.; KATHERINE, R. Human resources management and firm performance: The differential role of managerial affective and continuance commitment. Journal of Applied Psychology, 2009. 94(1), 263.

GREENE, ROBERTA R. Ecological perspective. Human behavior theory and social work practice, 1999. PP259.

JACKSON, S E.; RANDELL S. Understanding human resource management in the context of organizations and their environments. Annual review of psychology, 1995. 46(1), 237-264.

JACKSON, SE.; SEO, J. The greening of strategic HRM scholarship. Organization Management Journal, 2010. 7(4), 278-290.

JEURISSEN, R.; JPHN, E. Cannibals With Forks: The Triple Bottom Line of 21st Century Business. Journal of Business Ethics, 2000. 23, 229-231.
KORTEN, D.C. When corporations rule the world. European Business Review, 1998. 98(1). 9-13.

KRAMAR, R. Beyond strategic human resource management: is sustainable human resource management the next approach? The International Journal of Human Resource Management, 2014. 25(8), 1069-1089.

LINNENLUCEHE, MK.; GRIFFITHS, A. Corporate sustainability and organizational culture. Journal of World Business, 2010. 45(4), 357-366.

LOZANO, R. Envisioning sustainability three-dimensionally. Journal of Cleaner Production, 2008. 16(17), 1838-1846.

MALEY, J. Sustainability: the missing element in performance management. (S. M. and P. R. K. Dr, ed.), Asia-Pacific Journal of Business Administration, 2014. 6(3), 190-205.

NEJATI, M.; RABIEI, S.; CHIAPPETTA JABBOUR, C. Envisioning the invisible: Understanding the synergy between green human resource management and green supply chain management in manufacturing firms in Iran in light of the moderating effect of employees’ resistance to change. Journal of Cleaner Production, 2017. 168, 163-172.

OPATHA, HHDNP. Organizational Behaviour, The Human Side of Work. 2015.

PFEFFER, J. Building Sustainable Organizations: The Human Factor. Academy of Management Perspectives. 2017.

PORRAS, J.; Robertson, PETER J. Organization development theory: A typology and evaluation. Graduate School of Business, Stanford University. 1986.

RENWICK, DWS.; REDMAN, T.; MAGUIRE, S. Green human resource management: A review and research agenda. International Journal of Management Reviews, 2013. 15(1), 1-14.

ROCA, L.; SEARCY, A. C. An analysis of indicators disclosed in corporate sustainability reports. Journal of Cleaner Production, 2012. 20(1), 103-118.

RUSSO, M.; ANFI, V.; PAUL, A. A resource-based perspective on corporate environmental performance and profitability. Academy of management Journal, 1997. 40(3), 534-559.

SCHULER, A.; RANDALL S.; JACKSON, b.; SUSAN E. A Quarter-Century Review of Human Resource Management in the U.S.: The Growth in Importance of the International Perspective. management revu, 2005. 16(1), 11-35.

SCOTT, W. R. The Adolescence of Institutional Theory. 1987, 32(4 (Dec.), 493-511.

SPENCE, M. Job market signaling. In Uncertainty in economics Elsevier 1978. (pp. 281-306).

TRIPION, A. Human and Professional Sustainable Development by Using the EFI ROM Creative Method. Procedia Technology, 2015. 19, 410-415.

VEN, M.; ANDREW H. VAN, D. Using Paradox to Build Management and Organization Theories. 1989), 1989. 14(4 (Oct.), 562-578.

VON BERTALANFFY, L. The theory of open systems in physics and biology. Science, 1950. 111 (2872), 23-29.

WERNERFELT, B. A resource-based view of the firm. Strategic management journal, 1984. 5(2), 171-180.
Presenting a sustainable human resources model in the iranian automotive industry using the grounded theory approach

Resumo
Esta pesquisa visa fornecer um modelo de recursos humanos sustentáveis na indústria automotiva iraniana usando a abordagem teórica fundamentada. Para alcançar os objetivos da pesquisa utilizando o método de amostragem de bolas de neve sem probabilidade, as opiniões de 15 especialistas na área de recursos humanos e gerentes seniores de unidades de desenvolvimento das empresas Iran Khodro e Saipa foram utilizadas para o estágio teórico de saturação. O presente estudo foi realizado utilizando-se um método experimental de pesquisa mista. Durante a codificação aberta, aproximadamente 129 itens foram extraídos do texto das entrevistas como conceitos iniciais. Os resultados mostraram que as condições económicas têm a maior prioridade entre os estados causais, o recrutamento e a retenção da força de trabalho têm a maior prioridade entre as condições contextuais, o governo tem a maior prioridade entre as condições intervencionistas, o investimento em competência dos funcionários para os cenários atuais e futuros tem a maior prioridade entre as estratégias, e os benefícios financeiros e o crescimento económico têm a maior prioridade entre os resultados e consequências.

Palavras-chave: Recursos humanos sustentáveis. Indústria automotiva. Teoria fundamentada.

Abstract
This research aims to provide a model of sustainable human resources in the Iranian automotive industry using the grounded theory approach. To achieve the research objectives using the non-probability snowball sampling method, the opinions of 15 experts in the field of human resources and senior managers of development units of Iran Khodro and Saipa companies were used to the theoretical saturation stage. The present study has been conducted using an experimental mixed research method. During open coding, approximately 129 items were extracted from the text of interviews as initial concepts. The results showed that economic conditions have the highest priority among the causal states, recruitment and retention of the workforce have the highest priority among the contextual conditions, the government has the highest priority among the interventionist conditions, investment in employee competence for current and future scenarios has the highest priority among strategies, and financial benefits and economic growth have the highest priority among outcomes and consequences.

Keywords: Sustainable human resources. Automotive industry. Grounded theory.

Resumen
Esta investigación tiene como objetivo proporcionar un modelo de recursos humanos sostenibles en la industria automotriz iraní utilizando el enfoque de la teoría fundamentada. Para lograr los objetivos de la investigación utilizando el método de muestreo de bola de nieve no probabilística, se utilizaron las opiniones de 15 expertos en el campo de los recursos humanos y altos directivos de las unidades de desarrollo de las empresas Iran Khodro y Saipa en la etapa de saturación teórica. Durante la codificación abierta, se extrajeron aproximadamente 129 ítems del texto de las entrevistas como conceptos iniciales. Los resultados mostraron que las condiciones económicas tienen la mayor prioridad entre las condiciones contextuales, el gobierno tiene la mayor prioridad entre las condiciones intervencionistas, la inversión en la competencia de los empleados para los escenarios actuales y futuros tiene la mayor prioridad entre las estrategias, y los beneficios financieros y el crecimiento económico tienen la mayor prioridad entre los resultados y las consecuencias.

Palabras-clave: Recursos humanos sostenibles. Industria automotriz. Teoría fundamentada.